Cota: 630

Cota Antiga: 03 (22)

"Casa Primo Madeira"

"Universidade do Porto"

"Instalação Eléctrica"

"1982"

630 - 340

MINISTÉRIO DA EDUCAÇÃO

[redacted]

S. R. DIRECÇÃO REGIONAL DE EDUCAÇÃO DO NORTE
DIRECÇÃO DE SERVIÇOS DOS EQUIPAMENTOS EDUCATIVOS DO NORTE

A FIRMA
ELECTROFER - Pereira & Fontes, Lda
Rua Conde Ferreira, 27

4 300 PORTO

Sua referência: | Sua comunicação de | Nossa referência: Nº 9026 / / / P.º

Rua Júlio Dinis, 826, 4.º
Telef. 69 18 15 — 4000 PORTO
TELEX 20 634 DSN P

19.8 DEZ. 23.

ASSUNTO: "UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA"

Junto envio, para conhecimento de V.Exª, fotocópia do ofício nº- 8 965 /CEN de 22.12.88 , enviado ao Banco Português do Atlântico

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

/CM

630-358

MINISTÉRIO DA EDUCAÇÃO [redacted]

[redacted] DIRECÇÃO REGIONAL DE EDUCAÇÃO DO NORTE

S. E.

DIRECÇÃO DE SERVIÇOS DOS EQUIPAMENTOS EDUCATIVOS DO NORTE

Exmº Senhor
Director do Banco Português do Atlântico
Praça D. João I, 28

4 000 PORTO

Sua referência:	Sua comunicação de:	Nossa referência:	Rua Júlio Dinis, 826, 4.º Telef. 691815 — 4000 PORTO
		Nº 8937 / /	19[illegible]
		Pº	

ASSUNTO "FIANÇA Nº 02/52-767 EMITIDA EM 27.6.84"

Solicito a V.Exª, se digne mandar cancelar a fiança nº- 02/52-767 de Esc:- 175 000$00, respeitante aos décimos de garantia da Empreitada de " Universidade do Porto - Casa Primo Madeira"

adjudicada a ELECTROFER - Pereira & Fontes, Lda

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

630 - 336

MINISTÉRIO DA EDUCAÇÃO E CULTURA
SECRETARIA DE ESTADO DA ADMINISTRAÇÃO ESCOLAR
DIRECÇÃO-GERAL DOS EQUIPAMENTOS EDUCATIVOS
DIRECÇÃO DE SERVIÇOS DOS EQUIPAMENTOS EDUCATIVOS DO NORTE

S. R.

A FIRMA
Electrofer - Pereira & Fontes, Lda
Rua Conde Ferreira, 27

4 300 PORTO

Sua referência: Sua comunicação de: Nossa referência:

Rua Júlio Dinis, 826, 4.º
Telef. 69 18 15 — 4000 PORTO

Nº 3962 / 1988 MAI 26.

Pº

ASSUNTO *"UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA - INSTALAÇÃO ELECTRICA"*

Junto envio, para conhecimento de V.Exª, fotocópia do ofício nº- 3 856 /CEN de 25.5.88 , enviado *ao Banco Português do Atlântico*

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

/CM

630-884

MINISTÉRIO DA EDUCAÇÃO E CULTURA
SECRETARIA DE ESTADO DA ADMINISTRAÇÃO ESCOLAR
S. R. DIRECÇÃO-GERAL DOS EQUIPAMENTOS EDUCATIVOS
DIRECÇÃO DE SERVIÇOS DOS EQUIPAMENTOS EDUCATIVOS DO NORTE

Exmº Senhor
Director do Banco Português do Atlântico
Praça D.João I,28
4000 PORTO

Sua referência: Sua comunicação de: Nossa referência:

Rua Júlio Dinis, 826, 4.º
Telef. 691815 — 4000 PORTO

Nº 3856 / / 1988 MAI 25.

P.º

ASSUNTO: GARANTIA DE 04/02/83 DE ESC:-215.131$00"

Solicito a V.Exª,se digne mandar cancelar a fiança nº- de Esc:- 215.131$00 respeitante aos décimos de garantia da Empreitada de " Universidade do Porto - Casa Primo Madeira - Instalação eléctrica"
adjudicada a ELECTROFER - Pereira & Fontes,Lda

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

/MM

630-88 2

Universidade do Porto

Reitoria

APARTADO 211
4003 PORTO CODEX

S. R.

Ao Técnico Fiscal da Obra
Secção de Pessoal e Exp.
X Secção de Contabilidade
Secção de S. Técnico
Assessoria Jurídica

em 20/5/1988
O DIRECTOR

Exmo Senhor
Director dos Equipamentos
Educativos do Norte
Rua Júlio Dinis, 826-4º
4 000 PORTO

Sua referência	Sua Comunicação de	Nossa referência L.º	N.º	P.º	PORTO
			2617		19 MAIO 1988

ASSUNTO: "Universidade do Porto-Casa Primo Madeira-Instalação Eléctrica"

Em virtude de ter sido feita a recepção definitiva da empreitada em epígrafe, solicita-se a V. Exª., o favor de mandar cancelar a garantia bancária prestada pelo Banco Português do Atlântico, em 04/02/83, no valor de 215 131$00, (duzentos e quinze mil cento e trinta e um escudos), a pedido da firma Electrofer-Pereira & Fontes, Lda, assim como os reforços de depósito de garantia dos autos um a cinco (1 a 5).

Com os melhores cumprimentos,

O Reitor

(Prof. Doutor Alberto M. S. C. Amaral)

MINISTÉRIO DA EDUCAÇÃO E CULTURA
DIRECÇÃO DOS EQUIPAMENTO
DO NORTE
20 MAIO 1988
Fme DIV

630-330

MINISTERIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

DUPLICADO

Ano económico de 1985

Guia de deposito nº 2127 Escudos 41 650 $50

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de quarenta um mil seiscentos e cinquenta escudos e cinquenta centavos proveniente do desconto de 5% efectuado na folha nº 4911 da Direcção-Geral das Construções Escolares para reforço do depósito nº de garantia da empreitada de " Universidade do Porto- Casa Primo Madeira- Inst. el

adjudicada a Electrofer- Pereira & Fontes,Ldª
pelo contrato nº / , de de de 19
depósito esse feito por ordem de e à ordem da Direcção dos Serviços Regionais de Construções Escolares do Norte , sita em Rua Julio Dinis nº 826 Porto
entidade a quem deve ser enviado o respectivo conhecimento.

Lisboa, 11 de Novembro de 1985

O CHEFE DA REPARTIÇÃO

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
7 JAN. 1986
N.º — Proc. —

CAIXA GERAL DE DEPÓSITOS
TESOURARIA
10.12.85
RUA DO OURO

630-329

CAIXA GERAL DE DEPÓSITOS

DIRECÇÃO DE SERVIÇOS DE DEPÓSITOS

SUP-2-D-PÓLO DE ARMAZÉNS

Conhecimento do Depósito Necessário N.º 379720

recebido num cofre de LISBOA

no dia 10.DEZ.1985 de 198

Lisboa, 3.JAN.1986 de 198

Conferi O Chefe da 1.ª Secção

Averbamentos dos precatórios sobre o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: 10.DEZ.1985

MINISTERIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R.
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

A
ELECTROFER - Pereira & Fontes, Lda
Rua Conde Ferreira, 27
4 300 PORTO

10 NOV. 1985

Sua referência | Sua comunicação de | Nossa referência 6855 Ofício n.º | Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838 4000 PORTO - Portugal

ASSUNTO: "Universidade do Porto - Casa Primo Madeira-inst. eléct.
REVISÃO DE PREÇOS

Levo ao conhecimento de V. Exªs que se encontra em pagamento na secção de finanças junto do Banco de Portugal nesta cidade, a autorização nº 13117 de esc: 787 194$00, referente à situação nº única, ~~do qual se anexa cópia do respectivo auto de medição~~.

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

/CM

630-816

INFORMAÇÃO **519** CEN

24. OUT. 1985

"1 13 12 91 01-Universidade do porto-Casa Primo Madeira-
-Instalação Eléctrica"
-Revisão de Preços

Em aditamento à proposta 504/CEN de 12 de Setembro de 1985, informa-se que a revisão de preços em questão está de acordo com o previsto no Caderno de Encargos.

O ENGENHEIRO DIRECTOR

(Júlio Amaral de Carvalho)

Exmo.Senhor
ENG.DIRECTOR GERAL DAS CONSTRUÇÕES ESCOLARES
LISBOA
FC/CR

Cabimento 13/9/85

630-824

MINISTERIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

AUTORIZO
Em 17/9/1985
O SUBDIRECTOR-GERAL
A. Leitão Viana

Processado p/RSAU 8792/SEC 24.9.85.

DESPACHO
EXPEDIENTE GERAL
ADJUDICATÁRIA
CONTABILIDADE
TÉCNICO RESPONSÁVEL
CEN 19/09/85
O Director

SECÇÃO DE EXPEDIENTE GERAL E ARQUIVO
ENVIADA FOTOCÓPIA
À CN
18/9/85

PROPOSTA Nº 504 /CEN

Porto, 12 SET. 1985

ASSUNTO:" 1 13 12 91 01-Universidade do Porto-
Casa Primo Madeira-Instalação Electrica.
Revisão de preços Cont. 179/83
Periodo Março /83 a Setembro /83
—Capº 50 Divº 2 C.E. 11 47 00 833 010$00

A firma Electrofer-Pereira & Fontes, Ldª, adjudicatária da empreitada em epigrafe, pelo contrato nº 179/83 de 14.3.83, na importância de Esc:-4 302 623$00, remeteu a esta Direcção o cálculo da revisão de preços, referente às 5 primeiras situações de trabalhos no valor de Esc:-833 010$00, que se submete à apreciação superior.

Os cálculos estão bem elaborados e o seu desenvolvimento integra-se na legislação em vigor.

16/9/85

MINISTÉRIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Nestes termos solicita-se a V.Exª.se digne autorizar a concessão da verba de Esc:-833 010$00 para satisfação do presente encargo,com dispensa de contrato escrito nos termos da alínea c)do nº 2 artº 8º do Decreto-Lei nº 211/79 de 12 de Julho.

A citada verba tem cabimento nas disponibilidades da rubrica orçamental em referência.

O ENGENHEIRO DIRECTOR

(Júlio Amaral de Carvalho)

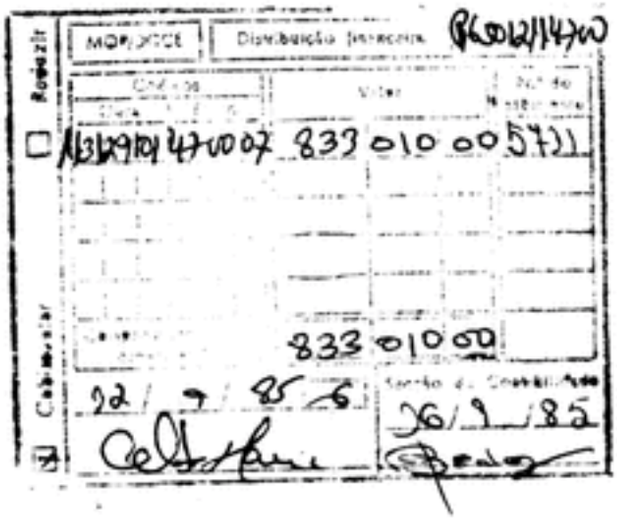
Exmº Senhor

ENGº DIRECTOR GERAL DAS CONSTRUÇÕES ESCOLARES

LISBOA

FC/MFM

630-800



PROPOSTA 504 12. SET. 1985

" 1 13 12 91 01-Universidade do Porto-
Casa Primo Madeira-Instalação Electrica.
Revisão de preços
Período Março /83 a Setembro /83
50 12 11 47 00 833 010$00

A firma Electrofer-Pereira Soares,Ldª,adjudicatária da empreitada em epigrafe,pelo contrato nº 179/83 de 14.3.83, na importância de Esc:-4 302 623$00,remeteu a esta Direcção o cálculo da revisão de preços,referente às 5 primeiras situações de trabalhos no valor de Esc:-833 010$00,que se submete à apreciação superior.

Os cálculos estão bem elaborados e o seu desenvolvimento integra-se na legislação em vigor.

Nestes termos solicita-se a V.Exª.se digne autorizar a concessão da verba de Esc:-833 010$00 para satisfação do presente encargo,com dispensa de contrato escrito nos termos da alinea c)do nº 2 artº 8º do Decreto-Lei nº 211/79 de 12 de Julho.

A citada verba tem cabimento nas disponibilidades da rubrica orçamental em referência.

O ENGENHEIRO DIRECTOR

(Júlio Amaral de Carvalho)

Exmº Senhor

ENGº DIRECTOR GERAL DAS CONSTRUÇÕES ESCOLARES

LISBOA

FC/MFM

630 - 315

630-314

PIDDAC/85

INFORMAÇÃO PARA CONTROLE DO PLANO E ORÇAMENTO

1 - O valor da proposta escalonada para o corrente ano tem cabimento no saldo da rubrica orçamental respectiva de (a) 125.011.432$00 ~~contos~~

2 - O valor da proposta excede em ______________ contos o valor do saldo por cabimentar na rubrica orçamental respectiva (a) ______________ contos.
Oferece-se como contrapartida uma redução de (b) __________ contos.

O Director

(a)-Indicar o saldo existente.

(b)-Indicar a empreitada ou fornecimento do mesmo ou de outro empreendimento onde se propõe a redução.

Prop. Nº 504/CEN de 12.9.85 de esc: 833.010$400
U.P. - Casa Primo Madeira - Inst. Elect. Revisão de Preços -

MINISTÉRIO DAS OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

630-320

PIDDAC/85

INFORMAÇÃO PARA CONTROLE DO PLANO E ORÇAMENTO

1 - O valor da proposta escalonada para o corrente ano tem cobertura no saldo existente na dotação atribuída em PIDDAC ao respectivo empreendimento (a) 10.622.442$00 ~~contos~~.

2 - O valor da proposta excede em ________________ contos o saldo existente na dotação atribuída em PIDDAC ao respectivo empreendimento (a) ____________________ contos.
Oferece-se como contrapartida para cobertura do defict uma redução na dotação atribuída em PIDDAC (b) ____________

O Director
[signature]

(a)-Indicar o valor do saldo existente.
(b)-Indicar o empreendimento do mesmo Programa, onde se propõe a redução.

Prop. Nº 504/CEN de 12.5.85 da CSE; 833.010$00
U.P. - Esc. Primária Medeira - Sust. Adic. - Revisão de Preços.

630-510

ELECTROFER
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.
Escritório: Rua Conde Ferreira, 27 • Telef. 560660
Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470
4300 PORTO

Ao:
ENGº. DIRECTOR DA DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
Rua Júlio Dinis, 826-4º
4000 PORTO

8/8/85

S/ REF.ª

N/ REF.ª

DATA: 06AGO.85

ASSUNTO: REVISÃO DE PREÇOS

EX.MO(S) SENHOR(ES)

Junto enviamos a V.Exª o cálculo de revisão de preços da Universidade do Porto - Casa Primo Madeira - Instalação Eléctrica.

9.9.85

Sem outro assunto de momento e agradecendo desde já o seguimento, subscrevemo-nos

De V.Exª
Muito Atenciosamente

ELECTROFER
PEREIRA & FONTES, L.DA
MONTAGENS ELÉCTRICAS
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
- 7 AGO. 1985
N.º 24.1 PROC. 21 U

630-308

ELECTROFER
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.
Escritório: Rua Conde Ferreira, 27 • Telef. 560660
Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470
4300 PORTO

S/ REF.ª

N/ REF.ª

DATA: 06AGO.85

ASSUNTO: REVISÃO DE PREÇOS

Á:
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES
DO NORTE
Rua Júlio Dinis, 826-4º
4000 PORTO

EX.MO(S) SENHOR(ES)

UNIVERSIDADE DO PORTO - CASA PRIMO

MADEIRA - INSTALAÇÃO ELÉCTRICA

1 - Dados caracteristicos da empreitada.
- Valor da adjudicação - 4.302.623$00
- Data da abertura das propostas - 17/11/82
- Data da consignação - 15/3/83
- Fim do prazo - 11/9/83
- 1ª Prorrogação até - 10/12/83
- 2ª " " - 7/6/84

2 - Coeficientes de actualização.

2.1 - Fórmula

$$C_t = 0{,}5\ \frac{St}{So} + 0{,}15\ \frac{Cht}{Cho} + 0{,}2\ \frac{Cut}{Cuo} + 0{,}15$$

So = 420,4 C_{h_o} = 1269,4 C_{u_o} = 331,6

3 - Pagamentos

29/4/83 - 200.000$00 (Março, Abril 83)
30/5/83 - 500.000$00 (Maio 83)
30/6/83 - 300.000$00 (Junho 83)
30/8/83 - 500.000$00 (Julho, Agosto 83)
30/9/83 - 2.000.000$00 (Setembro 83)

.../.../...

630-306

ELECTROFER
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.
Escritório: Rua Conde Ferreira, 27 • Telef. 560660
Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470
4300 PORTO

S/ REF.ª

N/ REF.ª

DATA: Ø6AGO.85

ASSUNTO: REVISÃO DE PREÇOS .../// ...

EX.MO(S) SENHOR(ES)

4 - Cálculo dos coeficientes.

$$C_{t_1} = 0,5\ \frac{511,1}{420,4} + 0,15\ \frac{1391,05}{1269,4} + 0,2\ \frac{396,35}{331,6} + 0,15 = 1,161302$$

$$C_{t_2} = 0,5\ \frac{511,1}{420,4} + 0,15\ \frac{1433,4}{1269,4} + 0,2\ \frac{415,8}{331,6} + 0,15 = 1,178038$$

$$C_{t_3} = 0,5\ \frac{511,1}{420,4} + 0,15\ \frac{1433,4}{1269,4} + 0,2\ \frac{435,9}{331,6} + 0,15 = 1,190162$$

$$C_{t_4} = 0,5\ \frac{514,4}{420,4} + 0,15\ \frac{1530,35}{1269,4} + 0,2\ \frac{471,55}{331,6} + 0,15 = 1,227044$$

$$C_{t_5} = 0,5\ \frac{514,4}{420,4} + 0,15\ \frac{1696,4}{1269,4} + 0,2\ \frac{511,2}{331,6} + 0,15 = 1,27058$$

5 - Cálculo dos valores de revisão.

200.000$00	x 0,161302 =	32.260$40
500.000$00	x 0,178038 =	89.019$00
300.000$00	x 0,190162 =	57.048$60
500.000$00	x 0,227044 =	113.522$00
2.000.000$00	x 0,27058 =	541.160$00
		833.010$00

Importa a revisão de preços das primeiras cinco situações de trabalhos na importância de oitecentos e trinta e três mil e dez escudos.

Porto, 6 de Agosto de 1985

ELECTROFER
PEREIRA & FONTES, L.da
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Telefone 560660 — PORTO

REVISÃO DE PREÇOS DE EMPREITADAS

(DEC LEI Nº 27. -B/7? DE 3 DE JUNHO)

ESQUEMA DE REVISÃO POR FORMULA

EMPREITADA Universidade do Porto - Casa Primo Madeira - Instalação Eléctrica

EMPREITEIRO Electro-Ind. Pereira & Forte Lda

DATA DO CONCURSO 17/11/82 DATA DA ADJUDICAÇÃO 30.11.82

PRAZO DE EXECUÇÃO 180 dias DATA DA CONSIGNAÇÃO 11.3.83

DATA DA CONCLUSÃO 11.9.83

PRORROGAÇÕES	PRAZO (DIAS)	CONCLUSÃO	MOTIVOS
1ª	90	10.12.83	Atraso const. civil
2ª	180	7/6/84	" " "
3ª			

VALORES DO CONTRATO
ADJUDICAÇÃO: 7.302.623$00
PROCESSADO ATÉ: à presente data - 3.400.000$00

VALORES ADICIONAIS PROCESSADOS		
TRAB MAIS	OBRAS COMPLEM	REVISÃO PREÇ

ADIANTAMENTOS PARA MATERIAIS	DATA DA CONCESSÃO	VALOR
1º		
2º		
3º		

TRABALHOS INICIAIS NÃO REVISIVEIS

AUTO DE MEDIÇÃO A PARTIR DO QUAL HA REVISÃO. Nº NO VALOR DE FORMULA DO CONTRATO

FORMULA(S) CORRIGIDA(S) FACE AO(S) ADIANTAMENTO(S)

PIDDAC/85

INFORMAÇÃO PARA CONTROLE DO PLANO E ORÇAMENTO

1 - O valor da proposta escalonada para o corrente ano tem cabimento no saldo da rubrica orçamental respectiva de (a) 125.011.432$00 ~~contos~~

2 - O valor da proposta excede em ______________ contos o valor do saldo por cabimentar na rubrica orçamental respectiva (a) ________________ contos.
Oferece-se como contrapartida uma redução de (b) __________ contos.

O Director

(a)-Indicar o saldo existente.

(b)-Indicar a empreitada ou fornecimento do mesmo ou de outro empreendimento onde se propõe a redução.

Prop. Nº 504/CEN de 12.9.85 de esc: 833.010$00
V.B – Casa Primo Madeira – Inst. Eléct. Revisão de Preços –

MINISTÉRIO DAS OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

630-300

PIDDAC/85

INFORMAÇÃO PARA CONTROLE DO PLANO E ORÇAMENTO

1 - O valor da proposta escalonada para o corrente ano tem cobertura no saldo existente na dotação atribuída em PIDDAC ao respectivo empreendimento (a) 10.622.442$00 ~~contos~~.

2 - O valor da proposta excede em ______________ contos o saldo existente na dotação atribuída em PIDDAC ao respectivo empreendimento (a) ______________ contos.
Oferece-se como contrapartida para cobertura do deficit uma redução na dotação atribuída em PIDDAC (b) ______________

O Director

[signature]

(a)-Indicar o valor do saldo existente.
(b)-Indicar o empreendimento do mesmo Programa, onde se propõe a redução.

Prop. Nº 504/CEN de 12.4.85 da esc: 833.010$00
U.P. - Escola Primária Afonso - Inst. Eléct. - Revisão de Preços.

Universidade do Porto - Casa Pinto
Madeira - Instalação Eléctrica
Revisão de Preços

Revisão Março 83 a Set 83 50 12 11 47900 833 010$00

A firma Electrofer - Pereira & Fontes, Lda. adjudicatária da empreitada em epígrafe, pelo contrato nº 179/83 de 14-3-83, na importância de esc: - 4.302.623$00, remeteu a esta Direcção o cálculo da revisão de preços, referente aos 5 primeiros situações de trabalho no valor de esc: 833.010$00, que se submete à apreciação superior.

Os cálculos estão bem elaborados e o seu desenvolvimento integra-se na legislação em vigor.

Nestes termos solicita-se a V. Exa. se digne autorizar a concessão da verba de esc: 833.010$00 para satisfação do presente encargo, com dispensa de contrato escrito nos termos da alínea c/ do nº 2 artº 8º do Dec Lei nº 211/79 de 12 de Julho.

A citada verba tem cabimento nas disponibilidades da rubrica orçamental em referência.

5.9.85

630-296

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUCÕES ESCOLARES
S. R DIRECÇÃO DAS CONSTRUCÕES ESCOLARES DO NORTE

À Firma

Electrofer - Pereira & Fontes, Ldª

Rua Conde Ferreira, 27

4300 PORTO

21-9-84

Sua referência | Sua comunicação de | Nossa referência Ofício n.º 4639

Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838
4000 PORTO - Portugal

ASSUNTO: "Universidade do Porto - Casa Primo Madeira"

- Instalação Eléctrica -

Junto remeto a V. Exªs 1 precatório-cheque na importância de Esc: 175 000$ 00 , respeitante aos décimos de garantia, retidos na empreitada em epígrafe.

Devem V.Sªs acusar a recepção deste documento.

O ENGENHEIRO-DIRECTOR

(Júlio Amaral de Carvalho)

Maria do Carmo Silva

630-294

S. R.

CONHECIMENTO DE DEPÓSITO

DUPLICADO

(Art.º 15.º do Decreto n.º 47 470, de 31 de Dezembro)

MINISTÉRIO DA HABITAÇÃO OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

2051

Ano económico de 198 3

Guia de depósito nº 1162 Escudos 25 000 00 $

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de Vinte cinco mil escudos

proveniente do desconto de 5% efectuado na folha nº 4248 da Direcção-Geral das Construções Escolares para reforço do depósito nº Universidade do Porto-Casa do Primo Madeira" de garantia da empreitada de " Inst. elect."

adjudicada a Electrofer-Pereira & Fontes ,Ldª.

pelo contrato nº 179/83 / , de 14 de Março de 19 83

depósito esse feito por ordem de e à ordem da Direcção de Serviços Regionais de Construções Escolares do Norte Rua Júlio Dinis,826-Porto, sita em

entidade a quem deve ser enviado o respectivo conhecimento.

Lisboa, 5 de Setembro de 19 83

CAIXA GERAL DE DEPÓSITOS TESOURARIA 10-OUT-1983 D DEPÓSITOS

O CHEFE DA REPARTIÇÃO

MINISTÉRIO DA HABITAÇÃO OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
REPARTIÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
- 7 OUT. 1983
N.º Proc.

630 - 293

CAIXA GERAL DE DEPÓSITOS

DIRECÇÃO DOS SERVIÇOS DE DEPÓSITOS

SDP-2 - DEPÓSITOS NECESSÁRIOS

Conhecimento do Depósito Necessário N.º 379720,

recebido num cofre de LISBOA,

no dia ..... de 19 SET. 1983 - 4 OUT. 1983 de 198 .....,

Lisboa, ... de ..... de 198 .....

Conferi

O Chefe da 1.ª Secção

Averbamentos aos precatórios sobre o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: 19 SET. 1983

630-292

S. R.

MINISTERIO DA HABITAÇÃO OBRAS PUBLICAS E TRANSPORTES
DEPARTAMENTO DE HABITAÇÃO E OBRAS PUBLICAS
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
SECÇÃO DOS SERVIÇOS ADMINISTRATIVOS

DUPLICADO

CONHECIMENTO DE DEPÓSITO

1220

(Art.º 15.º do Decreto n.º 684/70, de 31 de Dezembro)

Ano económico de 198 3

Guia de deposito nº 1451 Escudos 15 000$00

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de quinze mil escudos proveniente do desconto de 5% efectuado na folha nº 4538 da Direcção-Geral das Construções Escolares para reforço do depósito nº ..... de garantia da empreitada de " Universidade do Porto-Casa do Primo Madeira

adjudicada a Electrofer-Pereira & Fontes,Lda.

pelo contrato nº 179/83 /, de 14 de Março de 1983

depósito esse feito por ordem de e à ordem da Direcção de Serv.Reg. de Const. Escol. do Norte, sita em R.Júlio Dinis,826-Porto

entidade a quem deve ser enviado o respectivo conhecimento.

Lisboa, 27 de Outubro de 19 83

O CHEFE DA REPARTIÇÃO

DIRECÇÃO GERAL DE DEPÓSITOS

630 - 291

CAIXA GERAL DE DEPÓSITOS

DIRECÇÃO DOS SERVIÇOS DE DEPÓSITOS

SDP-2-DEPÓSITOS NECESSÁRIOS

Conhecimento do Depósito Necessário N.º 379720

recebido num cofre de LISBOA

no dia -8.NOV.1983 de ..... de 198....,

Lisboa, 21.NOV.1983 de ..... de 198....

Conferi — O Chefe da 1.ª Secção

Averbamentos dos precatórios soore o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: -8.NOV.1983

CONHECIMENTO DE DEPÓSITO

(Art.º 15.º do Decreto n.º 694/70, de 31 de Dezembro)

MINISTERIO DA HABITAÇAO OBRAS PUBLICAS E TRANSPORTES
DEPARTAMENTO DE HABITAÇAO E OBRAS PUBLICAS
DIRECCAO GERAL DAS CONSTRUCÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

DUPLICADO

1046

Ano económico de 1983

Guia de deposito nº 1576 Escudos 25 000 $ 00

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de Vinte cinco mil escudos proveniente do desconto de 5% efectuado na folha nº 4686 da Direcção-Geral das Construções Escolares para reforço do depósito nº de garantia da empreitada de " Universidade do Porto-Casa do Primo Madeira Inst. elect."

adjudicada a Electrofer-Pereira & Fontes,Ldª.

pelo contrato nº 179/83 / , de 14 de Março de 1983

depósito esse feito por ordem de e à ordem da Direcção de Serviços Regionais de Construções Escolares do Norte, sita em Rua Júlio Dinis-826-Porto

entidade a quem deve ser enviado o respectivo conhecimento.

CAIXA GERAL DE DEPÓSITOS · TESOURARIA · 12.12.1983 · D.S.D. - 1

Lisboa, 3 de Novembro de 1983

O CHEFE DA REPARTIÇÃO

630 - 289

CAIXA GERAL DE DEPÓSITOS

DIRECTO[illegible] DEPÓSITOS

SCP-2-DEPÓSITOS [illegible]

379720

Conhecimento do Depósito N.º [illegible]

recebido num cofre de LISBOA

no dia 12.DEZ.1983 de 193 .....

Lisboa, ... de -2 JAN. 1984 de 193 .....

Conferi

O Chefe da 1.ª Secção

Averbamentos dos precatórios sobre o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: 12.DEZ.1983

630-288

CONHECIMENTO DE DEPÓSITO

(Art.º 15.º do Decreto n.º 694/70, de 31 de Dezembro)

MINISTERIO DA HABITAÇAO OBRAS PUBLICAS E TRANSPORTES
DEPARTAMENTO DE HABITAÇAO E OBRAS PUBLICAS
DIRECCAO GERAL DAS CONSTRUCOES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

DUPLICADO

3203

Ano económico de 1983

Guia de deposito nº 1049 Escudos 10 000 $ 00

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de Dez mil escudos proveniente do desconto de 5% efectuado na folha nº 4102 da Direcção-Geral das Construções Escolares para reforço do depósito nº de garantia da empreitada de " Universidade do Porto-Casa do Primo Madeira-inst. elóct. "

adjudicada a ELECTROFER-Pereira & Fontes,Ldª.

pelo contrato nº 179/83 / , de 14 de Março de 19 83

depósito esse feito por ordem de e à ordem da Direcção de Serviços Regionais de Construções Escolares do Norte, sita em Rua Júlio Dinis,826-Porto

entidade a quem deve ser enviado o respectivo conhecimento.

Lisboa, 28 de Junho de 19 83

Ministério da Habitação e Obras Públicas e Transportes
Direcção-Geral das Construções Escolares
Direcção dos Serviços de Administração
Entrada em 26 JUN 1983
N.º Proc.

O CHEFE DA REPARTIÇÃO

630-287

CAIXA GERAL DE DEPÓSITOS

DEPOSITOS

2 - DEPÓSITOS NECESSÁRIOS

Conhecimento do Depósito Necessário N.º 37920

recebido num cofre de LISBOA

no dia ..... de -6 JUL 1983 ..... de 198 .....

Lisboa, ... de [redacted] ..... de 198 .....

Conferi

O Chefe da 1.ª Secção

Averbamentos aos precatórios sobre o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: -6 JUL 1983

630-286

S. R.

MINISTERIO DA HABITAÇÃO OBRAS PUBLICAS E TRANSPORTES
DEPARTAMENTO DE HABITAÇÃO E OBRAS PUBLICAS
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

DUPLICADO

1193

CONHECIMENTO DE DEPÓSITO

(Art.º 15.º do Dec.-Lei 48 470, de 31 de Dezembro)

Ano económico de 1983

Guia de deposito nº 1905 Escudos 100 000 $ 00

Vai o Tesoureiro de Obras Públicas, António Marques Mouco Júnior, depositar na Caixa Geral de Depósitos, Crédito e Previdência, a quantia de cem mil escudos proveniente do desconto de 5% efectuado na folha nº 4916 da Direcção-Geral das Construções Escolares para reforço do depósito nº de garantia da empreitada de " Universidade do Porto- Casa do Primo Madeira- Instalações Electrice adjudicada a Electrofer- Pereira & Fontes, Ldª pelo contrato nº /, de de de 19 depósito esse feito por ordem de e à ordem da Direcção dos Serviços Regionais de Construções Escolares do Norte, sita em Rua Julio Dinis nº 826 Porto entidade a quem deve ser enviado o respectivo conhecimento.

Lisboa, 30 de Dezembro de 19 83

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
10 FEV. 1984
N.º Proc.

O CHEFE DA REPARTIÇÃO

CAIXA GERAL DE DEPÓSITOS
RECEBEDORIA
16-1-1984
DS 51

630 - 285

CAIXA GERAL DE DEPÓSITOS

DIRECÇÃO DOS SERVIÇOS DE DEPÓSITOS

SECÇÃO DE DEPÓSITOS NECESSÁRIOS

Conhecimento do Depósito Necessário N.º 379720

recebido num caixe de LISBOA

no dia ...... de 16.JAN 1984 de 198.......

Lisboa, ... de -6.FEV 1984 de 198.......

Conferi   O Chefe da 1.ª Secção

Averbamentos dos precatórios sobre o depósito

MUITO IMPORTANTE

NO PRECATÓRIO DEVERÁ INDICAR-SE A DATA DA CONSTITUIÇÃO DO DEPÓSITO: 16.JAN 1984

MINISTÉRIO DO EQUIPAMENTO SOCIAL

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

S. R DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

184

630-284

A

Electrofer - Pereira & Fontes, Lda.
Rua Conde Ferreira, 27
4300 PORTO

17 Abr 1984

Sua referência	Sua comunicação de	Nossa referência Ofício n.º 1932 /CEN	Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838 4000 PORTO - Portugal

ASSUNTO: "Instalação eléctrica da U.P. -Casa Primo Madeira"

Informa-se V. Exª(s) de que, por despacho de 12/4/84, de S. Exª. o S.E.O.P., foi autorizada a prorrogação do prazo de execução da empreitada em epígrafe por 180 dias, com plenos direitos a revisão de preços.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

630-282

S. R.
MINISTÉRIO DO EQUIPAMENTO SOCIAL

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

A consideração do Senhor
Secretário de Estado:

Julgo ser de autorizar
9/4/84

AUTORIZO
Por Delegação de Sua Excelência
O MINISTRO DO EQUIPAMENTO SOCIAL
12-4-84

À GEN
12/4/84

SECÇÃO DE EXPEDIENTE GERAL E ARQUIVO
E COPIA FOTOCÓPIA
À GEN e GPC
13/4/84

24/4

16/4/84
Planeamento
Electromecânica
Arquitectura

5. Abr. 1984

INFORMAÇÃO N.º 266 /GEN/

ASSUNTO: "1.13.12.91.01 Instalação eléctrica da Universidade do Porto-Casa do Primo Madeira"
-Prorrogação de prazo-

A firma Electrofer-Pereira & Fontes, Lda adjudicatária da empreitada em epígrafe, endereçou a esta Direcção um pedido de prorrogação de prazo por mais cento e oitenta dias alegando nomeadamente atraso na construção civil e dificuldade em aquisição de materiais.

Entende esta Direcção que o motivo apresentado é correcto pelo que somos de parecer ser de conceder a prorrogação solicitada com plenos direitos à revisão de preços.

Dados complementares da empreitada

Valor da adjudicação - 4 302 623$00

Data da adjudicação - 30.11.82

Prazo de execução - 180 dias

Fim do prazo - 11.9.83

Fim do prazo com a 1a. prorrogação - 10.12.83

492

MINISTÉRIO DO EQUIPAMENTO SOCIAL

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

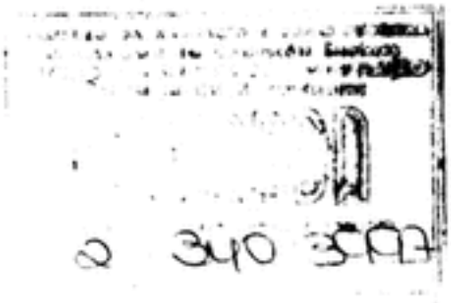
Importância processada - 3 500 000$00
Fim do prazo com a presente prorrogação - 7.6.84
É a 2a. prorrogação solicitada.

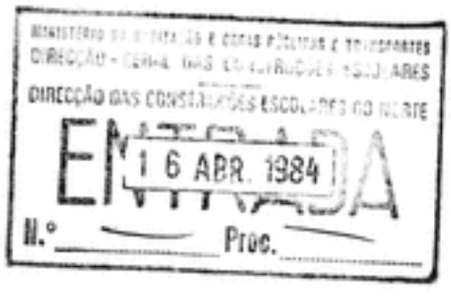
O Engenheiro Director,

(Júlio Amaral de Carvalho)

Exmº. Senhor
Engenheiro Director-Geral das Construções Escolares
LISBOA

FC/DP.





INFORMAÇÃO 266 CEM/ -5. Abr. 1984

"1.13.12.91.01 Instalação eléctrica da Universidade do Porto-Casa do Primo Madeira"
-Prorrogação de prazo-

A firma Electrofer-Pereira & Fontes, Lda adjudicatária da empreitada em epígrafe, endereçou a esta Direcção um pedido de prorrogação de prazo por mais cento e oitenta dias alegando nomeadamente atraso na construção civil e dificuldade em aquisição de materiais.

Entende esta Direcção que o motivo apresentado é correcto pelo que somos de parecer ser de conceder a prorrogação solicitada com plenos direitos à revisão de preços.

Dados complementares da empreitada

Valor da adjudicação - 4 302 623$00
Data da adjudicação - 30.11.82
Prazo de execução - 180 dias
Fim do prazo - 11.9.83
Fim do prazo com a 1a. prorrogação - 10.12.83

Importância processada - 3 500 000$00
Fim do prazo com a presente prorrogação - 7.6.84
É a 2a. prorrogação solicitada.

O Engenheiro Director,

(Júlio Amaral de Carvalho)

Exmº. Senhor
Engenheiro Director-Geral das Construções Escolares
LISBOA

FC/DP.

24-384 630-274

ELECTROFER
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.
Escritório: Rua Conde Ferreira, 27 • Telef. 560660
Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470
4300 PORTO

Exmº Sr.
Director das Construções Escolares do Norte
PORTO

S/ REF.ª
N/ REF.ª 0019/CONT./M.A.
DATA: 22MAR.84
ASSUNTO: PRORROGAÇÃO DE PRAZO

27/3/84

EX.MO(S) SENHOR(ES)

Junto enviamos uma prorrogação de prazo dirigida ao Exmº Senhor Ministro.

Agradecemos todo o bom seguimento que possa ser dado a este assunto.

Sem outro assunto de momento e agradecendo desde já, subscrevemo-nos,

De V.Exª

Muito Atenciosamente

ELECTROFER
PEREIRA & FONTES, L.DA
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
23 MAR. 1984
N.º 106 Proc. 21V

630-292

Nos termos da Lei não é permitido aumentar o número de linhas deste papel ou escrever nas suas margens.

IMPOSTO DO SELO 50$00

10$00 PORTUGAL DEZ ESCUDOS

Exmº Senhor

Ministro do Equipamento Social

LISBOA

A Firma Electrofer - Pereira & Fontes, Ldª com sede na Rua Conde Ferreira, 27 Porto, adjudicatária da empreitada de "Instalação Eléctrica da Universidade do Porto - Casa Primo Madeira", vem muito respeitosamente requerer a V.Exª que os trabalhos sejam prorrogados por mais Cento e oitenta dias, data em que prevemos o termo da nossa empreitada.

Este pedido deve-se ao facto de atraso na Construção Civil e dificuldade na aquisição de materiais.

Pede Deferimento

PORTO, 22 DE MARÇO DE 1984

Fernando Martins Pereira

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DE CONSTRUÇÕES ESCOLARES
DIRECÇÃO DE CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
23 MAR. 1984
N.º 906 Proc. DIV

MINISTÉRIO DA HABITAÇÃO, OBRAS PUBLICAS E TRANSPORTES
DIRECÇÃO GERAL DAS CONSTRUCÕES ESCOLARES
DIRECÇÃO DAS CONSTRUCÕES ESCOLARES DO NORTE

680-240

Exmo Senhor
Director dos Serviços de Administração da Direcção-Geral das Construções Escolares
LISBOA

28 MAI 1984

Sua referência	Sua comunicação de	Nossa referência	Rua João Dinis, 826, 4.º - Telef. 691815/691836
of.º 1411	27/4/83	Ofício n.º 1622 /CEN	4000 PORTO - Portugal

ASSUNTO. Instalação eléctrica da Univertsidade do Porto (Casa Primo Madeira)

Relativamente ao ofício acima mencionado, junto se envia a V.Exª a guia nº 48/83 da importância de esc: 28 398$00 respeitante ao pagamento dos emolumentos devidos pelo Visto do Tribunal de Contas.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

MN/.

5007720711

630-268

MINISTÉRIO DA Habitação, Obras Públicas e Transportes

(a) Direcção Geral das Construções Escolares

(b) Direcção dos Serviços de Administração

Ano económico de 1983 *Guia n.º* 48/83

Cofre *Esc.* 28 398$00

Receita do Estado

Vai Electro far-Pereira & Fontes, Ldª., com sede na Rua Conde Ferreira, 27-Porto

entregar (c) { *no cofre do Tesouro em* / *na Tesouraria da Fazenda Pública* }

e em conformidade com o artigo 4.º do Decreto com força de lei n.º 13 872, de 1 de Julho de 1927, e artigo 2.º do Decreto com força de lei n.º 14 908, de 18 de Janeiro de 1928, a quantia de vinte oito mil trezentos e noventa e oito escudos

proveniente (d) os emolumentos devidos nos termos dos Decretos-Lei 667/76 e 296/77 para a execução da Instalação eléctrica da Universidade do Porto (Casa Prisco Madeira)

que deverá ser escriturada como segue: V.T.C 4/4/83 Procº.029687 1ª.Contadoria - Geral

Capítulo	Grupo	Artigo	Descrição orçamental	Importância
02			Impostos Indirectos	
	03		Outros	
		025	Emolumentos do T.Contas	17 039$00
15			Contas de Ordem	
	03		Finanças e do Plano	
		04	Tribunal Contas	11 359$00

BANCO DE PORTUGAL 23 MAR 1984 PORTO

DIRECÇÃO DE FINANÇAS DO PORTO DEPARTAMENTO ... 23 MAR 1984 SERVIÇOS DISTRITAIS TRIBUTÁRIOS

Lisboa, *em* 22 *de* Abril *de* 1983

O Director de Serviços,

Carlos Vieira Costa

Referência do processo	
N.º	
L.º	
Div.	

Lançada
___/___/ 19___

676/82

(a) Serviço central de que depende o processador.
(b) Serviço processador.
(c) Riscar o que não convier.— Lisboa, Porto ou sedes de distritos, as entregas serão feitas no Banco de Portugal, respectivamente na sede, filial ou agências; nas sedes dos concelhos, far-se-ão nas tesourarias da Fazenda Pública.
(d) Indicar também o período a que a cobrança diz respeito.

Modelo n.º 23 (Exclusivo da Imprensa Nacional-Casa da Moeda)
C. P. — Mod. D 2.3

LC,

(A4 — 210 mm × 297 mm)

630-266

MINISTÉRIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO REGIONAL DE CONSTRUÇÕES ESCOLARES DO NORTE

Á
Electrofer-Pereira & Fontes, Ldª
Rua Conde Ferreira, 27
4300 PORTO

-9 FEV. 1984

Sua referência | Sua comunicação de | Nossa referência Ofício nº 722

Rua Júlio Dinis, 826, 4.º — Telefs. 691815 / 691838
4000 PORTO - Portugal

ASSUNTO: "Guia de Receita de Estado nº 48/83 de Esc: -28 398$00 , relativa ao pagamento de emolumentos devidos pelo Visto do Tribunal de Contas no contrato relativo à empreitada de:
"Instalação eléctrica da Universidade do Porto"
-(Casa Primo Madeira)-

Devem V. Exas. remeter de imediato, a guia de receita de Estado em epígrafe, com o averbamento do pagamento respectivo, sob pena de não ser feito qualquer processamento.

A referida Guia foi enviada a V. Exas. com o ofício nº. 2634/CEN de 3.3.83

Com os melhores cumprimentos.

O DIRECTOR DE SERVIÇOS

(Júlio Amaral de Carvalho)

MINISTÉRIO DA HABITAÇÃO, OBRAS PUBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUCOES ESCOLARES
S. R. DIRECÇÃO DAS CONSTRUCOES ESCOLARES DO NORTE

À FIRMA
ELECTROFER - Pereira & Fontes, Lda.
Rua Conde Ferreira, 27
4300 PORTO

Sua referência | Sua comunicação de | Nossa referência Ofício n.º 2634/CEN

Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838
4000 PORTO - Portugal

3.Maio.1983

ASSUNTO. "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO"
-(Casa Primo Madeira)-

Junto remeto a V.Sª(s) um exemplar do contrato da empreitada em epígrafe, devendo acusar a sua recepção.

Remeto também exemplares da guia nº 48/83 de esc: 28 398$00 , para pagamento dos emolumentos devidos pelo visto do Tribunal de Contas, devendo ser devolvidos a esta Direcção exemplares depois de satisfeita a sua liquidação, sem os quais não se poderá efectuar qualquer pagamento.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

MN/. MV

630-263

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4.º — PORTO
Telefones { 691815 / 691838

A Firma
Electrofer - Pereira & Fontes, Ldª
Rua Conde Ferreira, 27
4300 PORTO

Ofício N.º 92 PORTO. -6 JAN 1984

Assunto: Autorização de pagamento n.º 17046, relativa à importância de Esc. 1 890 000$00, correspondente ao auto de medição de trabalhos n.º 5ª que se junta referente à empreitada de « Casa do Primo Madeira da U.P. Instalação Eléctrica »

O pagamento efectua-se na secção de finanças junto do Banco de Portugal nesta cidade até 31JAN84

Sirva-se V. S.ª acusar a recepção deste auto.

O ENGENHEIRO DIRECTOR

/AM

Júlio Amaral de Carvalho

630-260

113129101

R65012114700

MINISTERIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

O INTERESSADO FEZ PROVA DE QUE TEM A SUA SITUAÇÃO CONTRIBUTIVA REGULARIZADA PERANTE A PREVIDÊNCIA.

AUTO DE VISTORIA E MEDIÇÃO DE TRABALHOS

Empreitada "Universidade do Porto - - Casa do Primo Madeira" - Instalação Eléctrica -

5ª Situação

Aos trinta dias do mês de Setembro mil novecentos e oitenta e três compareceram no local onde estão sendo executados os trabalhos que constituem a empreitada acima designada, adjudicada a Electrofer - Pereira & Fontes, Ldª Cont. nº 129405559000

por contrato n.º 676/82 / D. G. C. E. Registo n.º 179)83 / 8.ª Deleg. de 14 de Março de 1983

na importância de Esc. 4 302 623$00 visado pelo Tribunal de Contas em 4.4.83

o Engº Electrotécnico - José António Ferraz Campos

e o adjudicatário representante

a fim de, em harmonia com as condições do programa do concurso e condições gerais do respectivo caderno de encargos, procederem ao exame e medição dos trabalhos, tendo verificado que se encontram executadas as quantidades de trabalhos que constam nas folhas de medição de trabalhos anexas rubricadas pelos intervenientes;

CÓDIGO	DESIGNAÇÃO (RESUMO)	Importâncias totais
	Valor de trabalhos realizados	2 000 000$00

DESCONTOS:

5% para garantia	100 000$00	
0,5% para C. G. de Aposentações	10 000$00	
		110 000$00
Importância líquida a receber		1 890 000$00

Importa na quantia de dois milhões de escudos.

E nada mais havendo a tratar se lavrou o presente auto que depois de lido e julgado conforme, vai ser assinado pelo funcionário que nele tomou parte e pelo adjudicatário.

/AM

O representante da Direcção-Geral
José António Ferreira

O adjudicatário
Fernando Martins Pereira

Visto
Em 14/10/1983
O Director

A FIRMA
ELECTROFER-Pereira & Fontes, Lda.
Rua Conde Ferreira, 27
4300 PORTO

OFICIO 5822 27 SET. 1983

"INSTALAÇÃO ELECTRICA DA UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA"
-Prorrogação de prazo-

Comunica-se a V. Exas. de que por despacho de 23.9.83 do Senhor Director Geral das Construções Escolares foi autorizada a prorrogação de prazo de conclusão da empreitada em epígrafe, até ao próximo dia 30.9.83, com plenos direitos quanto à revisão de preços.

Com os melhores cumprimentos.

O ENGENHEIRO DIRECTOR,

(Júlio Amaral de Carvalho)

MFP/MV

29-9-83 630-256

MINISTÉRIO DO EQUIPAMENTO SOCIAL
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
S.R. DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

AUTORIZO
Por delegação de Sua Excelência o
Secretário de Estado das Obras Públicas
23/9/83
O SUBDIRECTOR-GERAL
A. Lousa Viana

26/9/83.

22 SET. 1983

SECÇÃO DE EXPEDIENTE GERAL E ARQUIVO
ENVIADA FOTOCÓPIA
A
23/9/83

INFORMAÇÃO Nº 482

ASSUNTO: "Instalação eléctrica da Universidade do Porto - Casa Primo Madeira"
- Prorrogação de prazo -

A firma Electrofer - Pereira & Fontes, Ldª., adjudicatária da empreitada em epígrafe, endereçou a esta Direcção um pedido de prorrogação de prazo por mais 90 dias alegando atrasos provocados pela construção civil.

Entende esta Direcção que o motivo apresentado é correcto pelo que somos de parecer ser de conceder a prorrogação solicitada, com plenos direitos à revisão de preços.

<u>DADOS COMPLEMENTARES DA EMPREITADA</u>:

Data da adjudicação: 30/11/82
Prazo contratual: 180 dias
Fim do prazo contratual: 11/9/83
Importância processada........................ 1 500 000$00

É a 1ª prorrogação solicitada.

630-254

O ENGENHEIRO DIRECTOR,

(Júlio Amaral de Carvalho)

Exmo. Senhor

DIRECTOR GERAL DAS CONSTRUÇOES ESCOLARES

<u>LISBOA</u>

FC/MM

630-252

INFORMAÇÃO 482

22 SET. 1983

"Instalação eléctrica da Universidade do Porto - Casa Primo Madeira"
- Prorrogação de prazo -

A firma Electrofer - Pereira & Fontes, Lda., adjudicatária da empreitada em epígrafe, endereçou a esta Direcção um pedido de prorrogação de prazo por mais 90 dias alegando atrasos provocados pela construção civil.

Entende esta Direcção que o motivo apresentado é correcto pelo que somos de parecer ser de conceder a prorrogação solicitada, com plenos direitos à revisão de preços.

<u>DADOS COMPLEMENTARES DA EMPREITADA</u>:

Data da adjudicação: 30/11/82
Prazo contratual: 180 dias
Fim do prazo contratual: 11/9/83
Importância processada..... 1 500 000$00

É a 1ª prorrogação solicitada.

630 - 851

O ENGENHEIRO DIRECTOR,

(Júlio Amaral de Carvalho)

Exmo. Senhor
DIRECTOR GERAL DAS CONSTRUÇOES ESCOLARES
LISBOA

FC/MM

16-9-83

630-250

R

R

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

573470

4300 PORTO

Exmº Srº.

Director das Construções Escolares do Norte

PORTO

S/ REF.ª

N/ REF.ª

DATA: 12SET.83

ASSUNTO: PRORROGAÇÃO DE PRAZO

15/9/83

EX.MO(S) SENHOR(ES)

Junto enviamos uma prorrogação de prazo dirigida ao Exmº Senhor Ministro.

Agradecemos todo o bom seguimento que possa ser dado a este assunto.

Sem outro assunto de momento e agradecendo desde já, subscrevemo-nos,

De V.Exª

Muito Atenciosamente

ELECTROFER PEREIRA & FONTES, LDA. MONTAGENS ELÉCTRICAS ELECTRICIDADE EM TODAS AS APLICAÇÕES Rua Conde Ferreira, 27 Telefone 560660 — PORTO

DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

ENTRADA 14 SET. 1983

N.º 239 Proc. DIV

21.9.83

630-248

Nos termos da Lei não é permitido aumentar o número de linhas deste papel ou escrever nas suas margens.

IMPOSTO DO SELO 40$00

10$00 PORTE PAGO DEZ ESCUDOS

Exmº Senhor

Ministro do Equipamento Social

LISBOA

A Firma Electrofer - Pereira & Fontes, Ldª com sede na Rua Conde Ferreira, 27 Porto, adjudicatária da Empreitada da "Instalação Eléctrica da Universidade do Porto - Casa Primo Madeira", vem muito respeitosamente requerer a V.Exª que os trabalhos sejam prorrogados por mais 90 dias, data em que prevemos o termo da nossa empreitada.

Este pedido deve-se ao facto de se tratar de uma obra de tipo muito especial em que houve necessidade de proceder á consolidação previa de várias paredes o que nos provocou atraso no andamento dos nossos trabalhos.

Pede Deferimento

PORTO, 12 DE SETEMBRO DE 1983

ELECTROFER
PEREIRA & FONTES L.DA
INSTALAÇÕES ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DELEGAÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
Nº 239 Proc. DIU

630-246

MINISTERIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

O INTERESSADO FEZ PROVA DE QUE TEM A SUA SITUAÇÃO CONTRIBUTIVA REGULARIZADA PERANTE A PREVIDÊNCIA.

113129101
R65012114700

AUTO DE VISTORIA E MEDIÇÃO DE TRABALHOS

Empreitada "Universidade do Porto - Casa do Primo Madeira" - Instalação Eléctrica -

4ª Situação

Aos trinta dias do mês de Agosto mil novecentos e oitenta e três compareceram no local onde estão sendo executados os trabalhos que constituem a empreitada acima designada, adjudicada a Electrófer - Pereira & Fontes, Ldª Cont. nº 129405559000

por contrato n.º 676/82 / D. G. C. E. Registo n.º 179/83 / 8.ª Deleg. de 14 de Março de 1983 na importância de Esc. 4 302 623$00 visado pelo Tribunal de Contas em 4.4.83

o Engº Electrotécnico - José António Ferraz Campos

e o adjudicatário representante

a fim de, em harmonia com as condições do programa do concurso e condições gerais do respectivo caderno de encargos, procederem ao exame e medição dos trabalhos, tendo verificado que se encontram executadas as quantidades de trabalhos que constam nas folhas de medição de trabalhos anexas rubricadas pelos intervenientes;

CÓDIGO	DESIGNAÇÃO (RESUMO)	Importâncias totais
	Valor de trabalhos realizados	580 000$00

DESCONTOS:

5 % para garantia	25 000$00	
0,5 % para C. G. de Apresentações	2 500$00	
		27 500$00
Importância líquida a receber		472 500$00

Importa na quantia de quinhentos mil escudos.

E nada mais havendo a tratar se lavrou o presente auto que depois de lido e julgado conforme, vai ser assinado pelo funcionário que nele tomou parte e pelo adjudicatário.

/AM

O representante da Direcção-Geral José António Ferraz Campos

O adjudicatário Fernando Martins Pereira

Visto
Em 12/9/1983
O Director

630-244

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4.º — PORTO
Telefones { 691815 / 691838

A
ELECTROFER - Pereira & Fontes, Lda
Rua Conde Ferreira, 27
4 300 PORTO

Ofício N.º 5708 PORTO. 20. SET. 1983

Assunto: Autorização de pagamento n.º 11660, relativa à importância de Esc. 283 500 $ 00, correspondente ao auto de medição de trabalhos n.º 3ª que se junta referente à empreitada de « Universidade do Porto - Casa do Primo Madeira-instalação eléctrica. »

O pagamento efectua-se Na Secção de Finanças junto do Banco de Portugal nesta cidade.

Sirva-se V. S.ª acusar a recepção deste auto.

/CM

O ENGENHEIRO DIRECTOR

Júlio Amaral de Carvalho

630-242

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

R65012114700

AUTO DE VISTORIA E MEDIÇÃO DE TRABALHOS

Empreitada **Universidade do Porto-Casa do Prino Moreira - inst. eléctrica**

3ª Situação

Aos **Trinta** dias do mês de **Junho** mil novecentos **e oitenta e três** compareceram no local onde estão sendo executados os trabalhos que constituem a empreitada acima designada, adjudicada a **ELECTROPER - Pereira & Fontes, Lda**

Contribuinte Nº 129405559000

por contrato n.º **676/82** / D. G. C. E. Registo n.º **179/83** / 8.ª Deleg. de **14** de **Março** de 19**83**

na importância de Esc. **4 302 623$00** visado pelo Tribunal de Contas em **4.4.83**

o **Engº Electrotécnico - José António Ferras Campos**

e o adjudicatário **Representante**

a fim de, em harmonia com as condições do programa do concurso e condições gerais do respectivo caderno de encargos, procederem ao exame e medição dos trabalhos, tendo verificado que se encontram executadas as quantidades de trabalhos que constam nas folhas de medição de trabalhos anexas rubricadas pelos intervenientes;

CÓDIGO	DESIGNAÇÃO (RESUMO)	Importâncias totais
	Valor dos trabalhos realizados	**300 000$00**

DESCONTOS:

5 % para garantia	15 000$00	
0,5 % para C. G. de Aposentações	1 500$00	
		16 500$00
Importância líquida a receber		283 500$00

Importa na quantia de **Trezentos mil escudos.**

/CM

E nada mais havendo a tratar se lavrou o presente auto que depois de lido e julgado conforme, vai ser assinado pelo funcionário que nele tomou parte e pelo adjudicatário.

O representante da Direcção-Geral

O adjudicatário

Visto

Em 12/7/1983

O Director

630-240

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4.º — PORTO

Telefones { 691815 / 691838

À Firma

Electrofer-Pereira & Fontes, Lda

Rua Conde Ferreira, 27

4300 PORTO

Ofício N.º 4930 PORTO. 18 AGO 1983

Assunto: Autorização de pagamento n.º 9925, relativa à importância de Esc. 472 500 $ 00, correspondente ao auto de medição de trabalhos n.º 2ª que se junta referente à empreitada de « Universidade do Porto - Casa do Primo Madeira Instalação Eléctrica »

O pagamento efectua-se na secção de finanças junto do Banco de Portugal nesta cidade.

Sirva-se V. S.ª acusar a recepção deste auto.

O ENGENHEIRO DIRECTOR

/AM

Júlio Amaral de Carvalho

Maria do Carmo Silva

MINISTÉRIO DA HABITAÇÃO E OBRAS PUBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARE

O INTERESSADO FEZ PROVA DE QUE TEM A SUA SITUAÇÃO CONTRIBUTIVA REGULARIZADA PERANTE A PREVIDÊNCIA.

EP13122729
R65012114700

AUTO DE VISTORIA E MEDIÇÃO DE TRABALHOS

Empreitada "Universidade do Porto - Casa do Primo Madeira" - Instalação Eléctrica -

2a Situação

Aos trinta dias do mês de Maio mil novecentos oitenta e três compareceram no local onde estão sendo executados os trabalhos que constituem a empreitada acima designada, adjudicada a Electrofer - Pereira & Fontes, Lda Contribuinte nº 129405559000

por contrato n.º 676/82 / D. G. C. E. Registo n.º 179/83 / 8.ª Deleg. de 14 de Março de 1983 na importância de Esc. 4 302 623$00 visado pelo Tribunal de Contas em 4.4.83

o Engº Electrotécnico - José António Ferraz Campos

e o adjudicatário representante

a fim de, em harmonia com as condições do programa do concurso e condições gerais do respectivo caderno de encargos, procederem ao exame e medição dos trabalhos, tendo verificado que se encontram executadas as quantidades de trabalhos que constam nas folhas de medição de trabalhos anexas rubricadas pelos intervenientes;

CÓDIGO	DESIGNAÇÃO (RESUMO)	Importâncias totais
	Valor de trabalhos realizados	**500 000$00**

DESCONTOS:

5 % para garantia	25 000$00	
0,5 % para C. G. de Aposentações	2 500$00	
		27 500$00
Importância líquida a receber		472 500$00

Importa na quantia de quinhentos mil escudos.

E nada mais havendo a tratar se lavrou o presente auto que depois de lido e julgado conforme, vai ser assinado pelo funcionário que nele tomou parte e pelo adjudicatário.

/AM

O representante da Direcção-Geral

O adjudicatário

Visto
Em 16 / 6 / 1983
O Director

630-256

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4.º — PORTO
Telefones { 691815 / 691838

A
ELECTROFER - Pereira & Fontes, Lda
Rua Conde Ferreira, 27
4 300 PORTO

Ofício N.º 4071 PORTO. 30. JUN. 1983

Assunto: Autorização de pagamento n.º 7 661, relativa à importância de Esc. 189 000 $ 00, correspondente ao auto de medição de trabalhos n.º 1a que se junta referente à empreitada de « Universidade do Porto - Casa do Primo Madeira - instalação eléctrica. »

O pagamento efectua-se Na Secção de Finanças junto do Banco de Portugal nesta cidade.

Sirva-se V. S.ª acusar a recepção deste auto.

/CM

O ENGENHEIRO DIRECTOR

Júlio Amaral de Carvalho

630 - 384

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

R65012104700

AUTO DE VISTORIA E MEDIÇÃO DE TRABALHOS

O INTERESSADO FEZ PROVA DE QUE TEM A SUA SITUAÇÃO CONTRIBUTIVA REGULARIZADA PERANTE A PREVIDÊNCIA.

Empreitada **Universidade do Porto-Casa do Primo Madeira - instalação eléctrica -**

1ª Situação

Aos **Vinte e nove** dias do mês de **Abril** mil novecentos **e oitenta e três** compareceram no local onde estão sendo executados os trabalhos que constituem a empreitada acima designada, adjudicada a **ELECTROFER - Pereira & Fontes, Lda.**

Contribuinte Nº 129405559000

por contrato n.º **676/82** / D. G. C. E. Registo n.º **179/83** / 8.ª Deleg. de **14** de **Março** de 19**83**

na importância de Esc. **4 302 623$00** visado pelo Tribunal de Contas em **4.4.83**

o **Engº Electrotécnico - José António Ferraz Campos**

e o adjudicatário **Representante**

a fim de, em harmonia com as condições do programa do concurso e condições gerais do respectivo caderno de encargos, procederem ao exame e medição dos trabalhos, tendo verificado que se encontram executadas as quantidades de trabalhos que constam nas folhas de medição de trabalhos anexas rubricadas pelos intervenientes;

CÓDIGO	DESIGNAÇÃO (RESUMO)	Importâncias totais
	Valor dos trabalhos realizados	**200 000$00**

DESCONTOS:

5 % para garantia	**10 000$00**	
0,5 % para C. G. de Aposentações	**1 000$00**	
		11 000$00
Importância líquida a receber		**189 000$00**

Importa na quantia de **Duzentos mil escudos.**

E nada mais havendo a tratar se lavrou o presente auto que depois de lido e julgado conforme, vai ser assinado pelo funcionário que nele tomou parte e pelo adjudicatário.

/CM

O representante da Direcção-Geral

O adjudicatário

Visto

Em 16/5/1983

O Director

6.5

630-289

MINISTÉRIO DA HABITAÇÃO, OBRAS PUBLICAS E TRANSPORTES
DIRECÇÃO GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

À FIRMA
ELECTROFER - Pereira & Fontes, Lda.
Rua Conde Ferreira, 27
4300 PORTO

Sua referência | Sua comunicação de | Nossa referência Ofício n.º 2634/CEN

Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838
4000 PORTO - Portugal

3.Maio.1983

ASSUNTO. "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO"
-(Casa Primo Madeira)-

Junto remeto a V.Sª(s) um exemplar do contrato da empreitada em epígrafe, devendo acusar a sua recepção.

Remeto também exemplares da guia nº 48/83 de esc: 28 398$00 ,para pagamento dos emolumentos devidos pelo visto do Tribunal de Contas, devendo ser devolvidos a esta Direcção exemplares depois de satisfeita a sua liquidação, sem os quais não se poderá efectuar qualquer pagamento.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

MN/. MV

630-280

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. **DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO**
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

29/4/83

Exmº. Senhor
Director das Construções
Escolares de **Norte**
Rua Júlio Dinis, 826-4º
4000 PORTO

Sua referência	Sua comunicação de	Nossa referência	Praça de Alvalade, 12 - Telef. 80 45 91/5
		N.º 1211	1799 - Lisboa - Codex - Portugal
		P.º	

ASSUNTO: "Contratos"

27 ABR 1983

"Intalação Eléctrica da Universidade do Porto (Casa Primo Madeira)"

Junto envio a V. Exª. dois exemplares do contrato n.º **179/83** referente à empreitada em epígrafe.

Um dos exemplares destina-se ao empreiteiro.

Mais envio a Guia de Receita do Estado, em quintuplicado, para pagamento dos emolumentos devidos pelo "Visto" do Tribunal de Contas, pelo que V. Exª. deverá remeter a esta Repartição no prazo máximo de 20 dias, os exemplares comprovativos do pagamento da mesma, para posterior remessa ao Tribunal de Contas.

Com os melhores cumprimentos.

O Director dos Serviços de Administração

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
29 ABR 1983
N.º 127 PROC. DIV

Anexo: 2 exemplares do contrato
Guia de R.E. n.º48/83

LG.

630-228

Foi pago o Imposto de selo por meio de guia ao abrigo do despacho do S. Estado do Orçamento de 9-9-980.

Ministério da Habitação e Obras Públicas

Direcção-Geral das Construções Escolares

Contrato número 676/82 registado na 8.ª Deleg. da D. G. C. Pública sob o n.º 179/83 para a execução da " Instalação eléctrica da Universidade do Porto Casa Primo Madeira".

adjudicada a ELECTROFER-Pereira & Fontes, Ldª.,

pela quantia de 4 302 623$00, que com a quantia de 430 262$50, para trabalhos a mais e imprevistos, perfaz o total de 4 732 885$50.-

Aos catorze dias do mês de Março de mil novecentos e oitenta e três, nesta cidade de Lisboa, na sede da Direcção-Geral das Construções Escolares compareceram perante mim, Maria Luísa Rainha das Neves Santos, casada, Chefe de Secção.-

na qualidade de oficial público, designado nos termos do n.º 1 do art.º 13.º do Dec.-Lei n.º 211/79 de 12/7, por despacho ministerial de vinte cinco de Setembro de mil novecentos e setenta e nove como primeiro outorgante e em representação do Estado, o Subdirector-Geral, Engº Rogério Leão de Almeida

que para o efeito foi designado ao abrigo do disposto no n.º 1 do art.º 14.º do mencionado

/IS

diploma, no despacho de trinta de Novembro de mil novecentos e oitenta dois que aprovou a correspondente minuta, e como segundo outorgante, Electrofer- Pereira & Fontes, Ldª., com sede na Rua Conde Ferreira, 27 - Porto, que neste acto se fez representar pelo Sr. Fernando Martins Pereira, portador do B.I. nº 1957044 de 8/2/78, Arq. do Porto, válido até 8/2/83.

pessoas cujas identidades foram legalmente reconhecidas, se lavra o presente termo de contrato para execução dos trabalhos atrás referidos e após concurso Limitado realizado no dia dezassete de Novembro de mil novecentos e oitenta dois de harmonia com o despacho de trinta de Novembro de mil novecentos e oitenta dois de Sua Excelência o Secretário de Estado das Obras Públicas .-

O presente contrato compreende as condições seguintes:

ARTIGO PRIMEIRO: — Na execução dos trabalhos que constituem o objecto deste contrato e em todos os actos que lhe digam respeito o adjudicatário obriga-se a cumprir o disposto no respectivo caderno de encargos, que fica fazendo parte integrante deste contrato.

ARTIGO SEGUNDO: — Os trabalhos constantes do presente contrato deverão iniciar-se dentro de 8 dias, contados a partir da data da consignação e estar concluídos no prazo de 180 dias, contados a partir da mesma data.-

630 - 224

Foi pago o Imposto de selo por meio de guia ao abrigo do despacho do S. Estado do Orçamento de 9-9-980.

~~A consignação terá lugar no prazo de 30 dias, contados da data da assinatura deste contrato~~

~~e produzirá efeitos depois do Visto do Tribunal de Contas.~~

O prazo de garantia é de 365 dias .-

contados a partir da data da recepção provisória.

ARTIGO TERCEIRO: — Em toda a execução da obra vigorarão os salários mínimos, constantes da tabela oficialmente em vigor .-

ARTIGO QUARTO: — O encargo total deste contrato é de 4 732 885$50, o qual será custeado até à importância de 5 000$00, pela dotação inscrita no Capº 50º, Sector 02, Divisão 06, Código Económico 47.00 do orçamento em vigor para o corrente ano 1982, e, os restantes Esc: 4 727 885$50, ou o que se apurar como saldo pela rúbrica que lhe corresponder no ano 1983. -No encargo total deste contrato está incluída a quantia de 430 262$50, para trabalhos a mais e imprevistos .-

ARTIGO QUINTO:— A empreitada é executada por preço global fazendo-se o pagamento em prestações variáveis em função das quantidades de trabalho periódico executado.-

Pelo adjudicatário foi declarado que aceita o presente contrato com todas as suas condições, de que tem inteiro e perfeito conhecimento e a cujo cumprimento se obriga por sua pessoa e bens presentes e futuros, perante o Juízo da Comarca de Lisboa, com renúncia

de quaisquer direitos em contrário.

Neste acto foi verificado que o adjudicatário constituíu depósito definitivo na quantia de 215 131$00, correspondente a 5% do valor da adjudicação efectuado por garantia bancária da importancia acima citada prestada pelo Banco Português do Atlântico, em 4/2/83, Porto a qual serve para garantir o integral cumprimento deste contrato.

O adjudicatário apresentou documento relativo ao pagtº da quantia 24 161$00 efectuado no conc.do Porto (2º Bairro) em 29/3/82, referente ao ano 1981, e à Contribuição Industrial.

O presente termo do contrato está escrito em três folhas de papel de vinte e cinco linhas, seladas cada uma com uma estampilha fiscal de ~~trinta~~ quarenta escudos, que pelos outorgantes vão rubricadas à excepção da última por conter as assinaturas.

Foi pago o selo devido na importância de 14 199$00, conforme guia R.E. nº 302/82 de 22/12/82, efectuado na Direcção de Finanças do Porto (4ª Secção) em 24/1/83, e, guia R.E nº 5/83, de esc: 2 800$00, referente ao papel selado .-

São ainda devidos emolumentos pelo «Visto» do Tribunal de Contas, que serão satisfeitos nos termos do Art. 2.º do n.º 1, do Dec.-Lei n.º 356/73 de 14/7, com as alterações introduzidas pelos Dec.-Leis n.ºs 667/76 de 5/8 e 296/77 de 20/7.

Ao presente contrato aplicam-se as disposições do Decreto-Lei, nº

630-220

Foi pago o Imposto de selo por meio de guia ao abrigo do despacho do S. Estado do Orçamento de 9-9-980.

109/82 de 8 Abril .-

Foram de tudo testemunhas presentes: Idalina dos Anjos Ribeiro de Sá, viúva, escriturária-dactilógrafo 1ª classe, e, Ilda Miranda Pereira Pinto Ângelo, casada, 2º oficial, ambos funcionários desta Direcção-Geral, os quais com as partes outorgantes vão assinar o presente contrato, celebrado perante mim que o fiz escrever e também o assino depois de a todos ter sido lido em voz alta.

Em tempo se declara, que não tendo sido possível últimar as formalidades inerentes à celebração do presente contrato passará o seu Artº 4º a ter a seguinte redacção:

O encargo total destet contrato é de 4 732 885$50, o qual será custeado na sua totalidade pela dotação inscrita no Capº 50º, Sector 12, Divisão 10, Código Económico 47.00, do orçamento em vigor para o corrente ano 1983.- No encargo total deste contrato está incluída a quantia de 430 262$50, para trabalhos a mais e imprevistos.

Trata-se de empreendimento já aprovada em ano anterior, pelo que se compreende nas despesas de Investimento do Plano, previstos no Artº 12º da Lei, nº 64/77, com a nova redacção dada pelo Artº 1º da Lei, nº 18/78 e que nos termos do Artº 7º do Decreto-Lei, 493/82 poderá ser realizada.

630-218

TRIBUNAL DE CONTAS

VISADO

-4 ABR. 83

TRIBUNAL DE CONTAS

DIRECÇÃO-GERAL

028687 30 MAR 83

1.ª CONTADORIA - GERAL

1-13 | 12 | 91 | 01
R | 47 | 00 | 01 |

3618 / 1

A despesa de que trata o presente documento tem cabimento no Cap. 50 Art.º 12 N.º 10 Al. 47.00 do Orçamento em vigor, por Esc. 4 734 885$50

7 / 12 / 1983

Confirmo,

SERVIÇO DO VISTO

EMOLUMENTOS DEVIDOS

(Art. 5.º da Tabela anexa ao Dec.-Lei 356/73 e n.º 1 do art.º 1.º do Dec.-Lei 131/82)

PARA O ESTADO - 17039.00

PARA O COFRE DO T.º DE CONTAS - 11359.00

TOTAL 28398.00

11|4

630-216
VISTO
8/4/1983

S. R.

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
Direcção das Construções Escolares do Norte

AUTO DE CONSIGNAÇÃO DE TRABALHOS nos termos do D. L. 109/82 de 8 Abril

No dia 15 de Março de mil novecentos e oitenta e três, no local onde devem ser executados os trabalhos que constituem* Universidade do Porto Casa Primo Madeira - Instalação eléctrica adjudicada a Electrofer de Pereira & Fontes, Ldª por despacho de S.E.O.P. de 30 de Novembro de mil novecentos e oitenta e dois compareceram o Engenheiro-Electrotécnico-Principal, José António Ferraz de Campos e o representante, adjudicatário dos referidos trabalhos. Foram entregues ao adjudicatário cópias das peças escritas e desenhadas a que se refere** empreitada e prestadas as necessárias e convenientes indicações para ficarem bem definidas as condições em que os trabalhos devem ser realizados.

Neste acto reconheceu-se que tudo estava de harmonia com as cláusulas contratuais e segundo o projecto

Por o representante, adjudicatário foi declarado que aceitava e reconhecia como inteiramente exactos os mencionados resultados dos quais se concluía: tudo estar conforme

Por Engº Electrotécnico-Princ. José António Ferraz de Campos como representante do dono da obra foi declarado que aceitava as conclusões e fazia a consignação dos respectivos trabalhos, nos termos e para os efeitos do disposto no Decreto-Lei n.º 109/82 de 8 de Abril.

Neste acto foi apresentado pelo adjudicatário o certificado do seguro do pessoal, pela apólice n.º 9303 da Companhia de Seguros "Atlas"

E não havendo mais nada a tratar, foi dada por finda a consignação e lavrado o presente auto que depois de lido em voz alta e julgado conforme, vai ser assinado pelos que intervieram neste acto.

José António Ferraz de Campos
Fernando Martins Pessoa

* a empreitada ou o fornecimento
** Departamento Regional

po-630 : 0072

630 - 214

S. R.

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

À consideração do Senhor
Secretário de Estado;

Julgo ser de autorizar como é proposto e de aprovar a anexa minuta de contrato

30.11.82

O SUBDIRECTOR-GERAL

R. Leão de Almeida

AUTORIZO
30/11/82
O Secretário de Estado das Obras Públicas,

J. Eugénio Nobre

SECÇÃO DE EXPEDIENTE GERAL E ARQUIVO
ENVIADA FOTOCÓPIA
17/12/82

PROPOSTA N.º 676/CEN

Porto, 30 NOV. 1982

ASSUNTO: "UNIVERSIDADE DO PORTO-CASA PRIMO MADEIRA"
-INSTALAÇÃO ELÉCTRICA-

SP 13 12 27 29

—Cap.º 50 Div. 02.06 C.E. 47.00 5.000$00

Por ser necessário e urgente realizar as obras em epígrafe, elaborou-se o respectivo projecto, na importância de esc: 3.999.000$00 que se tem a honra de submeter à apreciação de V. Ex.ª.

Dada a necessidade premente de executar as obras e na persuasão de que o referido projecto mereça aprovação, promoveu esta Direcção nos termos da alínea a) do nº. 1 do artº.5º do Decreto-Lei nº. 211/79 de 12 de Julho a abertura de um concurso limitado, entre as firmas de comprovada idoneidade e capacidade técnica abaixo mencionadas, para adjudicação da empreitada com prazo de execução de 100 dias:

2163

630-219

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Exmo Senhor
Director dos Serviços de Administração da Direcção-Geral das Construções Escolares

LISBOA

Sua referência	Sua comunicação de	Nossa referência	Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838
677	23/2/83	Ofício n.º 1432 CEN/	4000 PORTO - Portugal

ASSUNTO: "Instalação eléctrica da Universidade do Porto" -8 MAR 1983
-casa Primo Madeira-

Em referência ao ofício acima citado, junto se devolve a V.Exª o exemplar do contrato da empreitada em epígrafe, devidamente assinado pelo respectivo adjudicatário.

Também se devolve a guia nº 5/83 de esc:- 2 800$00, respeitante ao pagamento do imposto do selo.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

MN/.

630 - 210

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES

(a) Direcção-Geral das Construções Escolares

(b) Direcção dos Serviços de Administração

Ano económico de 19 83 *Guia n.º* 5/83

Cofre *Esc.* 2 800$00

Receita do Estado

Vai – **Electrofer – Pereira & Fontes, Ldª., com sede na Rua Conde Ferreira, nº 27 – Porto**

entregar (c) { *no cofre do Tesouro em* / *na Tesouraria da Fazenda Pública*

e em conformidade com o artigo 4.º do Decreto com força de lei n.º 13 872, de 1 de Julho de 1927, e artigo 2.º do Decreto com força de lei n.º 14 908, de 18 de Janeiro de 1928, a quantia de – **dois mil e oitocentos escudos .–**

proveniente (d) **o Imposto do selo devido nos termos do contrato da Inst. eléct. da Universidade do Porto (Casa primo da Madeira)**

que deverá ser escriturada como segue: **(70 selos de 40$00 cada)**

Capítulo	Grupo	Artigo	Descrição orçamental	Importância
02			Impostos Indirectos	
	03		Outros	
		01	Imposto de selo	2 800$00

DIRECÇÃO DE FINANÇAS DO PORTO 4.º Secção 4 MAR. 1983

BANCO DE PORTUGAL 04 MAR 1983 PORTO

Lisboa, *em* 21 *de* **Fevereiro** *de 19*83

O **Director de Serviços**

Carlos Vieira Costa

(A4 – 210 mm × 297 mm)

(a) Serviço central de que depende o processador.
(b) Serviço processador.
(c) Riscar o que não convier. — Em Lisb.ª Porto ou sedes de distritos, as entregas serão feitas no ...co de Portugal, respectivamente na sede, filial ou agências; nas sedes dos concelhos, far-se-ão nas tesourarias da Fazenda Pública.
(d) Indicar também o período a que a cobrança diz respeito.

Referência do processo	
	N.º
	L.º
	Div.

Lançada
___/___/ 19___

676

Modelo n.º 23 (Exclusivo da Imprensa Nacional-Casa da Moeda)
/IS C. P. — Mod. D 2.3

630 - 208

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUCÕES ESCOLARES
S. R DIRECÇÃO DAS CONSTRUCÕES ESCOLARES DO NORTE

A
Electrofer-Pereira & Fontes, Ldª
Rua Conde Ferreira, 27
4300 PORTO

Sua referência | Sua comunicação de | Nossa referência Ofício n.º 1236 CEN/ | Rua Júlio Dinis, 826, 4.º - Telef. 691815/691838 4000 PORTO - Portugal

ASSUNTO: "Instalação eléctrica da Universidade do Porto" -Casa Primo Madeira)-

-1 MAR 1983

A fim de ser assinado o exemplar do contrato da empreitada em epígrafe, deve o v/representante, Sr. Fernando Martins Pereira, comparecer nesta Direcção, até ao dia 4.3.83

Junta-se a guia nº 5/83 de esc: 2 800$00 para pagamento do imposto de selo, a qual deve ser entregue aquando da assinatura do contrato.

Com os melhores cumprimentos.

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

MN/.

630-206

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

28/2/83

Exmº Senhor

Engenheiro Director das Construções Escolares **do Norte**

Rua Júlio Dinis, 826 - 4º

4000 PORTO

Sua referência | Sua comunicação de | Nossa referência N.º 677 P.º

Praça de Alvalade, 12 - Telef. 80 45 91/5
1799 - Lisboa - Codex - Portugal

23 FEV 1983

ASSUNTO: Instalação eléctrica da Universidade do Porto (Casa Primo Madeira)

Junto envio a V.Exª a fim de ser assinado pelo empreiteiro, um exemplar do contrato relativo à empreitada em epígrafe, o qual deverá ser devolvido a esta Repartição no prazo máximo de 5 dias, a contar desta data, acompanhado do duplicado da guia de Receita do Estado nº 5/83 , comprovativa da efectivação do seu pagamento.

Com os melhores cumprimentos.

O DIRECTOR DOS SERVIÇOS DE ADMINISTRAÇÃO

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
28 FEV. 1983
N.º Proc.

Carlos Vieira Costa

Anexo: 1 contrato
1 Guia R.E.nº 5/83

/IS

630-204 P/CONHECT.º À CEN
17/1

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

19/1/83

À Firma

ELECTROFER-Pereira & Fontes, Ldª.

Rua Conde Ferreira, 27

4300 PORTO

C/Aviso Recepção

Sua referência: | Sua comunicação de | Nossa referência Nº 233 P.º

Praça de Alvalade, 12 - Telef. 80 45 91/5
1799 - Lisboa - Codex - Portugal

18 JAN 1983

ASSUNTO: "Instalação eléctrica da Universidade do Porto - Casa Primo Madeira"

Para efeitos de elaboração do contrato da empreitada em epígrafe, solicita-se de V.Exª. o envio, urgente, a esta Repartição, dos elementos solicitados pelo ofício nº. 5213 de 27.12.82 , a fim de que não sejam tomadas medidas rigorosas.

Os citados elementos deverão ser entregues no prazo máximo de 10 (dez) dias, ou seja, até 27 do corrente mês.

Caso este prazo não seja cumprido, ao abrigo do artº 96º. do Dec.Lei nº.48 871 de 19.2.1969, propor-se-á a adjudicação sem efeito.

Com os melhores cumprimentos,

O DIRECTOR DOS SERVIÇOS DE ADMINISTRAÇÃO,

Carlos Vieira Costa

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA 15 JAN 1983
N.º Proc.

/ipa.

630-202

Para encaminhamento à CEN 22/12

à Secretaria 22/12

30/12/82

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
S. R. DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO
REPARTIÇÃO DOS SERVIÇOS ADMINISTRATIVOS

C/aviso de recepção

Á firma
ELECTROFER - Pereira & Fontes, Ldª
Rua Conde Ferreira, 27 - Porto
4300 PORTO

Sua referência | Sua comunicação de | Nossa referência N.º 5213 /Contratos P.º

Praça de Alvalade, 12 - Telef. 80 45 91/5
1799 - Lisboa - Codex - Portugal

ASSUNTO: **Instalação eléctrica da Universidade do Porto**
Casa Primo Madeira

A fim de ser elaborado o contrato da empreitada em epígrafe adjudicada a **essa firma** por despacho de **30/11/82** no valor de Esc. **4 302 623$00**, torna-se necessário o envio a esta Repartição, dos elementos abaixo designados, no prazo máximo de 8 dias:

- Guia (duplicado) comprovativa do depósito definitivo de 5% de Esc. **215 131$00** para garantia do contrato (esta guia é passada mediante modelo que se junta) ou garantia bancária de igual valor. - [X]

- Guia de Receita do Estado para efeito do pagamento do imposto do selo de Esc. **14 199$00** devido pelo contrato a celebrar. Logo que a guia se encontre liquidada deverá o respectivo duplicado ser devolvido a esta Repartição. - - - - - - - - - - - - [X]

- Declaração de que se sujeita à tabela dos salários mínimos em vigor. - [ ]

- Declaração com assinatura reconhecida donde conste que não está em dívida à Fazenda Nacional por contribuições e Impostos liquidados nos últimos três anos . - - - - - - - - - - - - - - - - [ ]

- Documento comprovativo do pagamento da Contribuição Industrial respeitante ao ano findo. - - - - - - - - - - - - - - - - - - - [ ]

- Nome, estado e residência da pessoa que representa a firma na assinatura do contrato, bem como o número do B. I., data, prazo de validade e Arquivo de Identificação que o forneceu.- - - [ ]

Nº de Contribuinte da pessoa, bem como da respectiva firma --X

- Número, classe e categoria de Alvará do empreiteiro. - - - - - - - [ ]

Com os melhores cumprimentos.

O Director dos Serviços de Administração

Carlos Vieira Costa

Guia R.E.nº 302
Cópia à CEN
Anexo: modelo de Guia

/IS

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
ENTRADA
29 DEZ. 1982
N.º Proc.

630 - 200

27/12/82

A
Electrofer-Pereira & Fontes, Ldª
Rua Conde Ferreira, 27
4300 PORTO

Ofício N.º 8270 PORTO—Rua Júlio Dinis, 826-4.º

21 DEZ. 1982

ASSUNTO: *"Universidade do Porto - Casa Primo Madeira"*
-Instalação eléctrica-

Para conhecimento de V. Sa.(s) e devidos efeitos, comunico que por despacho ministerial de *30.11.82*, foi aprovada a sua proposta na importância de Esc. *4 302 623$00*,

para a execução das obras em epígrafe, *mediante a celebração de contrato* ■■■- *escrito.*

~~Junta-se o respectivo projecto.~~

A BEM DA NAÇÃO
O ENGENHEIRO-DIRECTOR,

(Julio Amaral de Carvalho)
~~(César Montenegro)~~

630 - 198

22.12.82

S. R.

MINISTÉRIO DA HABITAÇÃO, OBRAS PÚBLICAS E TRANSPORTES
~~MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS~~
DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

À Secretaria, Planeamento e Electro-Mecânica

À consideração do Senhor Secretário de Estado;

Queira ser de autorizar como é proposto e de aprovar a anexa minuta de contrato

30.11.82

O SUBDIRECTOR-GERAL

R. Leão de Almeida

AUTORIZO 20/12/82
30/11/82
O Secretário de Estado das Obras Públicas

J. Eugénio Nobre

CEN 16.12.82

SECÇÃO DE EXPEDIENTE GERAL E ARQUIVO
ENVIADA FOTOCÓPIA
17/12/82

PROPOSTA N.º 676/CEN Porto, 30 NOV. 1982

22-12-82

ASSUNTO: "UNIVERSIDADE DO PORTO-CASA PEREIRA CARNEIRO"
-INSTALAÇÃO ELÉCTRICA-

SP 13/122729

7.80
9.12.82
7.12.82

— Cap.º 50 Div.02 .06 C.E. 47 002 5.000$00

Por ser necessário e urgente realizar as obras em epígrafe, elaborou-se o respectivo projecto, no importância de esc: 3.999.000$00 que se tem a honra de submeter à apreciação de V. Exª.

Dada a necessidade premente de executar as obras e na persuasão de que o referido projecto merece aprovação, promoveu esta Direcção nos termos da alínea a) do nº. 1 do artº.5º do Decreto-Lei nº. 211/79 de 12 de Julho a abertura de um concurso limitado, entre as firmas de comprovada idoneidade e capacidade técnica abaixo mencionadas, para adjudicação da empreitada com prazo de execução de 120 dias:

30/11/82

2163

MINISTERIO DA HABITAÇÃO OBRAS PUBLICAS E TRANSPORTES
DIRECÇÃO GERAL DAS CONSTRUCÕES ESCOLARES
S.R. DIRECÇÃO DAS CONSTRUCÕES ESCOLARES DO NORTE

-Electro Forno
-Electrificadora Sadi
-Electro-Fer de Pereira & Fontes, Ldª.
-Costa, Teixeira & Silva Ldª.
-Sigma e
-Soares da Costa. S.A.R.L

tendo sido recebidas as seguintes propostas:

-Costa, Teixeira, Silva Ldª..... 4.598.620$00
-Electrofer-Pereira & Fontes,Ldª..... 4 302 623$00

Da análise às referidas propostas afigura-se que a do concorrente Electrofer- Pereira & Fontes Ldª. no valor de esc: 4.302.623$00 é a mais vantajosa para os interesses do Estado pois apresenta o preço mais baixo, superior 8% ao preço base, mas que se justifica atendendo à especificidade da obra e à sua dificuldade de execução, comprometendo-se o concorrente a cumprir o estipulado no Caderno de Encargos, tendo já demonstrado noutras obras por si efectuadas possuir condições que garantem a boa execução da empreitada.

Destes termos tem-se a honra de sugerir a V. Exª que a empreitada lhe seja adjudicada pela importância de esc: 4.302.623$00 mediante celebração de contrato escrito nos termos da alínea a) do nº. 1 do artº. 8 do D.Lei atrás citado.

O presente encargo de esc: 4.302.623$00 acrescido de 10% (esc: 430.262$50) para trabalhos a mais e imprevistos poderá ser escalonado como segue:

Ano de 1982..... 5.000$00
Ano de 1983 ..... 4.727.885$50 ou o que se vier a apurar como saldo.

A verba de esc: 5.000$00 prevista para o corrente ano, tem cabimento nas disponibilidades da rubrica orçamental em referência.

O ENGENHEIRO-DIRECTOR
(Júlio Amaral de Carvalho)

SECRETARIADO DA
RECEBIDO
30 NOV. 1982

Exmº. Senhor
Director Geral das Construções
Escolares
Lisboa

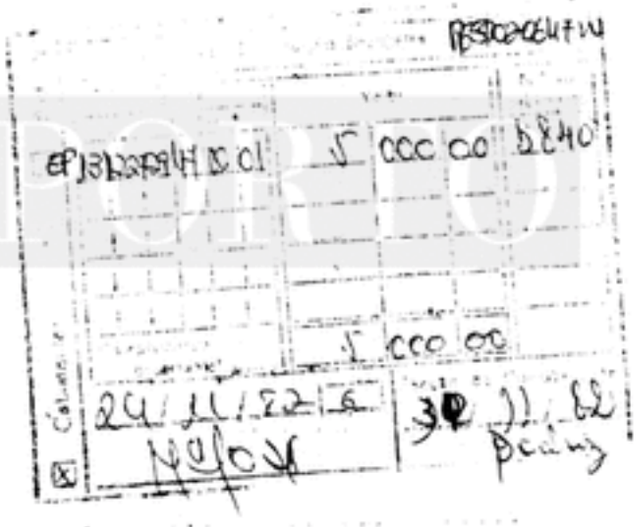
2 0 DEZ. 19
N.º

José Manuel da Silva Vieira

Registo N.º 675
Lx.ª 9/12/82

../..

630-194



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25/11/82

PROPOSTA 676

"UNIVERSIDADE DO PORTO-CASA PRIMO MADEIRA"
-INSTALAÇÃO ELÉCTRICA-

5.000$00

Por ser necessário e urgente realizar as obras em epígrafe, elaborou-se o respectivo projecto, na importância de esc: 3.999.000$00 que se tem a honra de submeter à apreciação de V. Exª.

Dada a necessidade premente de executar as obras e na persuasão de que o referido projecto mereça aprovação, promoveu esta Direcção nos termos da alínea a) do nº. 1 do artº.5º do Decreto-Lei nº. 211/79 de 12 de Julho a abertura de um concurso limitado, entre as firmas de comprovada idoneidade e capacidade técnica abaixo mencionadas, para adjudicação da empreitada com prazo de execução de 180 dias:

-Electro Forno

-Electrificadora Sadi

-Electro-Fer de Pereira & Fontes, Ldª.

-Costa, Teixeira & Silva Ldª.

-Sigma e

-Soares da Costa. S.A.R.L

tendo sido recebidas as seguintes propostas:

-Costa, Teixeira& Silva Ldª..... 4.598.620$00

- Electrofer - Pereira & Fontes, Ldª ——— 4.302.623$00

Da análise às referidas propostas afigura-se que a do concorrente Electrofer- Pereira & Fontes Ldª. no valor de esc: 4.302.623$00 é a mais vantajosa para os interesses do Estado pois apresenta o preço mais baixo, superior 8% ao preço base, mas que se justifica atendendo à especificidade da obra e à sua dificuldade de execução, comprometendo-se o concorrente a cumprir o estipulado no Caderno de Encargos, tendo já demonstrado noutras obras por si efectuadas possuir condições que garantem a boa execução da empreitada.

Nestes termos tem-se a honra de sugerir a V. Exª que a empreitada lhe seja adjudicada pela importância de esc: 4.302.623$00 mediante celebração de contrato escrito nos termos da alínea a) do nº. 1 do artº. 8 do D.Lei atrás citado.

O presente encargo de esc: 4.302.623$00 acrescido de 10% (esc: 430.262$00) para trabalhos a mais o imprevistos poderá ser escalonado como segue:

Ano de 1982..... 5.000$00

Ano de 1983 ..... 4.727.885$50 ou o que se vier a apurar como saldo.

A verba de esc: 5.000$00 prevista para o corrente ano, tem cabimento nas disponibilidades da rubrica orçamental em referência.

O ENGENHEIRO-DIRECTOR

(Júlio Amaral de Carvalho)

Exmº. Senhor
Director Geral das Construções
Escolares
Lisboa

FC/MC

630 - 189

630-183

S. R.

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Foram convidados:
Electro Forno 7138
Electrificadora SADE 7139
Electrofer-Pereira e Fontes, Ldª. 7140
Costa Teixeira & Silva, Ldª. 7141
SICMA 7142
Soares da Costa 7143

ASSUNTO – Empreitada de " UNIVERSIDADE DO PORTO"
CASA PRIMO MADEIRA
-INSTALAÇÃO ELÉCTRICA-

OFICIO

Encontra-se patente nesta Direcção o processo de concurso da empreitada em titulo, cuja base de licitação é de Esc.: 3.999.000$00

É obrigatório apresentar memória descritiva dos materiais a apresentar.

Caso esteja interessado na execução destas obras, deve enviar pelo correio em carta registada, a esta Direcção, uma proposta em papel comum acompanhada de duas cópias, **até às 15 horas do dia** 17/11/82.

A **abertura** das propostas está prevista **para o dia e hora indicados.**

Na proposta deve figurar **o prazo de** 180 **dias** para a execução da empreitada.

A proposta deve ser acompanhada da relação dos preços unitários, em triplicado, que sirvam de base à sua elaboração, com a indicação das quantidades de trabalho e as correspondentes importâncias parciais e totais.

A bem da Nação

O ENGENHEIRO-DIRECTOR,

(Júlio Amaral de Carvalho)

Formato A-4

Ao G.E.P. —
— Electro-Mecânica

17/11/82

Concurso limitado em 17 de Novembro de 1982
"Universidade do Porto - Casa Primeiro Modelo -
Instalação eléctrica -

22-11-82

Preço base = 3.999.000$00
Prazo de execução = 180 dias

Nº de ordem	Concorrentes	Propostas
1	Electrofer - Pereira & Fontes, Lda	4.302.623$00 *
2	Costa Teixeira & Silva, Lda	4.598.620$00

Universidade do Porto

Casa Primo Madeira

Abrir concurso limitado

630-284

Preço base 3.999.000$00

Prazo de execução 180 dias

Data do concurso 17-11-82

Obrigatório apresentar memória descritiva dos materiais a empregar

Firmas a convidar

Electro-Forno

Electrificação SADI

Electro-Jet

Costa Teixeira & Filha, Lda

Sigma

Soares da Costa

630 - 983

S. R.

MINISTÉRIO DAS OBRAS PÚBLICAS

DIRECÇÃO-GERAL DAS CONSTRUÇÕES ESCOLARES

DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

TELEFONES n.os 691815 e 691838

Ex.mo Senhor

Director do Distrito Escolar de

Ofício N.º

PORTO — Rua Júlio Dinis, 826-4.º

ASSUNTO:

Levo ao conhecimento de V. Ex.ª de que ao abrigo da Lei n.º 2107 de 5 de Abril de 1961, serão brevemente, realizadas obras de conservação e reparação nos edifícios escolares abaixo designados, pelo que rogo a V. Ex.ª se digne avisar os respectivos agentes de ensino.

Concelho	Freguesia	Núcleo	Salas

Apresento a V. Ex.ª os meus cumprimentos.

A Bem da Nação
O ENGENHEIRO-DIRECTOR,

(Cesar Montenegro)

224029

Formato A-4

630 - 1821

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

P R O P O S T A

COSTA, TEIXEIRA & SILVA, LDª., com sede na Rua de Salgueiros, 617, no Porto, titular dos Alvarás de Empreiteiro de Obras Públicas Nºs:
- 10.820 da 1ª. Subcategoria da VI Categoria, classificado na 3ª. Classe;
- 10.821 da 3ª. Subcategoria da VI Categoria, classificado na 3ª. Classe;
- 10.822 da 6ª. Subcategoria da VI Categoria, classificado na 3ª. Classe,

depois de ter tomado conhecimento do objecto da empreitada de "UNIVERSIDADE DO PORTO" CASA PRIMO MADEIRA - INSTALAÇÃO ELÉCTRICA -, a que se refere o convite datado de 4 de Novembro de 1982, obriga-se a executar todos os trabalhos que constituem essa empreitada, em conformidade com o Caderno de Encargos, pelo preço global de ESC. 4.598.620$00 (QUATRO MILHÕES QUINHENTOS E NOVENTA E OITO MIL SEISCENTOS E VINTE ESCUDOS), no prazo de 180 dias.

Mais declara que renuncia a foro especial e se submete em tudo que respeitar à execução do seu contrato, ao que se achar prescrito na legislação portuguesa em vigor.

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, L.da
A GERÊNCIA

630-180

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

17. NOV. 1962

"UNIVERSIDADE DO PORTO"
CASA PRIMO MADEIRA

- INSTALAÇÃO ELÉCTRICA -

MEMÓRIA DESCRITIVA

A instalação que nos propomos executar obedece ao Caderno de Encargos e Lista de Medições.

Será realizada dentro das melhores regras da arte, no sentido de se conseguir uma valorização técnica e estética da obra.

CONDUTORES E CABOS

Estes serão de acordo com o pedido no Caderno de Encargos e das marcas nacionais: CEL-CAT, CUNHA BARROS e CABELTE.

CAIXAS

Estas serão de acordo com o pedido no Caderno de Encargos das marcas JSL, SIPE, EEC ou equivalente.

APARELHAGEM

Toda a aparelhagem de manobra e tomadas serão de acordo com o Caderno de Encargos e das marcas SIPE, JSL ou equivalente.

TUBAGEM

Toda a tubagem será constituida por tubos do tipo VD e das marcas SIPE, JSL ou equivalente.

QUADROS ELÉCTRICOS

Serão de acordo com o pedido no Caderno de Encargos constituida

.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

17. NOV. 1982

.../...

em chapa de ferro zincor devidamente tratada e pintada.

O seu equipamento será o pedido no Caderno de Encargos.

Os disjuntores serão BBC, SIEMENS ou AEG.

RELÓGIOS

Serão da ROLIM, REGISCONTA ou equivalente.

ARMADURAS

Serão das marcas ELPOR, LUMITEL, OSVALDO MATOS ou equivalente.

SOM

Será da PHILIPS ou equivalente.

DETECÇÃO DE INCÊNDIOS

Será do GRUPO 8, EPS, ou GARLAND, LAIDLEY.

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, Lda.

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
"UNIVERSIDADE DO PORTO" CASA PRIMO MADEIRA				
- INSTALAÇÃO ELÉCTRICA -				
Cap. I				
Tubagem e caixas				
Artº. 1º. Fornecimento e montagem de tubos de plástico do tipo ERFE montado interiormente em roço conforme CE.de:				
16	1620	72$00	116.640$00	
20	1560	75$00	117.000$00	
25	590	80$00	47.200$00	
Artº. 2º. Idem, tipo VD de:				
32	90	99$00	8.910$00	
48	70	103$00	7.210$00	
Artº. 3º. Fornecimento e montagem em vala de tubo de polietileno preto de 4Kg de:				
2"	700	124$00	86.800$00	
4"	120	262$00	31.440$00	
Artº. 4º. Fornecimento e montagem à vista nas condições do C.E de tubo VD, de:				
16	100	72$00	7.200$00	
20	70	75$00	5.250$00	
25	15	80$00	1.200$00	
Artº. 5º. Fornecimento e montagem de caixas de derivação				
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
embebidas, incluindo placas em porcelana:				
c/ 2 entradas	40	273$00	10.920$00	
c/ 3 entradas	120	280$00	33.600$00	
c/ 4 entradas	43	285$00	12.255$00	
c/ 5 entradas	19	290$00	5.510$00	
c/ 6 entradas	7	295$00	2.065$00	
Artº. 6º Fornecimento e montagem à vista de caixas de baquelite conforme C.E:				
c/ 2 entradas	8	442$00	3.536$00	
c/ 3 entradas	20	450$00	9.000$00	
c/ 4 entradas	15	470$00	7.050$00	
c/ 5 entradas	7	490$00	3.430$00	
c/ 6 entradas	4	510$00	2.040$00	
Artº. 7º. Idem, idem, de caixas de baquelite conforme C.E:				
c/ 7 entradas	1	600$00	600$00	
c/ 8 entradas	1	620$00	620$00	
Artº. 8º. Idem, idem, de caixas de visita no exterior conforme C.E.	8	6.325$00	50.600$00	
Artº. 10º. Abertura e tapamento de vala.	850	300$00	255.000$00	
				825.076$00
Cap. II				
Condutores e Cabos				
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Artº. 1º. Fornecimento e montagem enfiada dos seguintes condutores:				
V - 1,5 mm2	3700	16$00	59.200$00	
V - 2,5 mm2	700	19$00	13.300$00	
V - 4 mm2	500	30$00	15.000$00	
V - 10 mm2	70	60$00	4.200$00	
V - 16 mm2	80	80$00	6.400$00	
TV - 0,75 mm ∅	820	14$00	11.480$00	
Artº. 2º. Fornecimento e montagem à vista dos seguintes cabos:				
VV 2x1,5 mm2	200	189$00	37.800$00	
VV 3x1,5 mm2	70	197$00	13.790$00	
VV 4x1,5 mm2	15	205$00	3.075$00	
VV 3x2,5 mm2	140	210$00	29.400$00	
VV 4x2,5 mm2	120	219$00	26.280$00	
VV 5x2,5 mm2	55	234$00	12.870$00	
Artº. 3º. Fornecimento e montagem em vala ou em tubo dos seguintes cabos:				
VAV 3x70+35+T35 mm2	40	1.500$00	60.000$00	
VAV 4x10 mm2	65	311$00	20.215$00	
VAV 4x4 mm2	350	170$00	59.500$00	
VAV 3x4 mm2	100	130$00	13.000$00	
VAV 2x4 mm2	350	111$00	38.850$00	
VAV 4x4+T4	150	200$00	30.000$00	
				454.360$00
Cap. III				
Aparelhagem				
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Artº. 1º. Fornecimento e montagem da seguinte aparelhagem do tipo estanque:				
Interruptores	16	208$00	3.328$00	
Com. escada	3	235$00	705$00	
Tom. monof.c/terra	23	268$00	6.164$00	
Artº. 2º. Idem, idem, da seguinte aparelhagem de comando para montagem embebida:				
Interruptores	19	158$00	3.002$00	
Com. Lustre	20	241$00	4.820$00	
Com. escada	3	188$00	564$00	
Tom. monof. c/ terra	108	217$00	23.436$00	
Botões de pressão	17	145$00	2.465$00	
Rosetas p/telefone c/ 4 bornes.	24	145$00	3.480$00	
				47.964$00
Cap. IV				
Aparelhagem Diversa				
Artº. 1º. Fornecimento e montagem da seguinte aparelhagem:				
- Quadro de alvos c/				
5 nºs.	1	6.200$00	6.200$00	
15 nºs.	1	8.500$00	8.500$00	
- Pára-Raios radioactivo incluindo todos os acessórios conforme C.E.	1	100.000$00	100.000$00	
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
- Radiadores de 1000W	40	5.800$00	232.000$00	
- Amplificador de potência	1	78.000$00	78.000$00	
- Colunas de som	2	5.000$00	10.000$00	
- Microfones dinâmicos	4	13.000$00	52.000$00	
- Bases de mesa p/ microfone	3	3.000$00	9.000$00	
- Coluna extensível para microfone.	1	4.000$00	4.000$00	
- Sistema de pedido de audiência, conforme C.E.	4	14.000$00	56.000$00	
				555.700$00
Cap. V				
Detecção de Incêndio				
Artº. 1º. Fornecimento e montagem do seguinte material:				
- Central.	1	300.000$00	300.000$00	
- Detectores de fases de combustão completos, para montagem embebida.	42	6.000$00	252.000$00	
- Idem, para montagem saliente.	21	6.300$00	132.300$00	
- Indicadores de acção e respectiva armadura para montagem saliente.	10	1.000$00	10.000$00	
- Indicadores de acção e respectiva armadura para montagem embebida.	18	1.200$00	21.600$00	
- Botões de alarme manual para montagem embebida.	3	4.000$00	12.000$00	
- Botões de alarme manual para montagem saliente.	1	4.500$00	4.500$00	
				.../...

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
- Plevom	1	40.000$00	40.000$00	
- Sirene	1	10.000$00	10.000$00	
- Verificador de detectores c/ garrafa de gás.	1	10.000$00	10.000$00	
				792.400$00
Cap. VI				
Quadros Eléctricos				
Artº. 1º. Fornecimento e montagem dos seguintes quadros:				
Q.G.	1	200.000$00	200.000$00	
Q.1	1	34.000$00	34.000$00	
Q.1.1	1	34.000$00	34.000$00	
Q.2	1	34.000$00	34.000$00	
Q.3	1	34.000$00	34.000$00	
Q.4	1	34.000$00	34.000$00	
				370.000$00
Cap. VII				
Armaduras				
Artº. 1º. Fornecimento e montagem das seguintes armaduras, completamente electrificadas:				
A1 (1x58W)	11	4.000$00	44.000$00	
A2 (60W)	13	1.500$00	19.500$00	
A3 (32+22)	18	3.800$00	68.400$00	
A5 (2x18W)	10	3.500$00	35.000$00	
A6 (1x36W)	11	3.600$00	39.600$00	
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
A7 (60W)	8	1.500$00	12.000$00	
A8 (2×36W)	26	4.500$00	117.000$00	
A9 (4×18W)	6	5.000$00	30.000$00	
A10 (4×18W+E)	1	17.000$00	17.000$00	
A11 (2×58W)	4	6.000$00	24.000$00	
A12 (1×36W)	2	3.600$00	7.200$00	
A13 (80W HPL)	23	31.000$00	713.000$00	
A14 (1000 W)	8	15.000$00	120.000$00	
Ls (8+8W)	10	14.000$00	140.000$00	
AE (8W)	8	12.000$00	96.000$00	
Reparação das armaduras (A3) a conservar.	10	3.000$00	30.000$00	
Montagem de ganchos de suspensão para as armaduras Ax.	10	500$00	5.000$00	
				1.517.700$00
Cap. VIII				
Terras				
Artº. 1º. Fornecimento e montagem de electrodos de terra conforme C.E.	1	2.120$00	2.120$00	
Artº. 2º. Fornecimento e montagem de electrodos de terra tipo "piquet" de 1,5 m de comprido, e chicote de 25 m2 para as armaduras de iluminação exterior.	23	1.100$00	25.300$00	
				27.420$00
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Cap. IX				
Diversos				
Artº. 1º. Fornecimento e montagem na portaria de uma armadura tipo A1: (1x58W) e respectivos circuitos.	1	6.000$00	6.000$00	
Artº. 2º. Idem, na portaria de tomada monofásica c/terra.	1	2.000$00	2.000$00	
				8.000$00

RESUMO

Capítulo I	825.076$00
Capítulo II	454.360$00
Capítulo III	47.964$00
Capítulo IV	555.700$00
Capítulo V	792.400$00
Capítulo VI	370.000$00
Capítulo VII	1.517.700$00
Capítulo VIII	27.420$00
Capítulo IX	8.000$00
TOTAL GERAL	4.598.620$00

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, Lda.
A GERÊNCIA

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

PROPOSTA

COSTA, TEIXEIRA & SILVA, LDª., com sede na Rua de Salgueiros, 617, no Porto, titular dos Alvarás de Empreiteiro de Obras Públicas Nºs:
- 10.820 da 1ª. Subcategoria da VI Categoria, classificado na 3ª. Classe;
- 10.821 da 3ª. Subcategoria da VI Categoria, classificado na 3ª. Classe;
- 10.822 da 6ª. Subcategoria da VI Categoria, classificado na 3ª. Classe,

depois de ter tomado conhecimento do objecto da empreitada de "UNIVERSIDADE DO PORTO" CASA PRIMO MADEIRA - INSTALAÇÃO ELÉCTRICA -, a que se refere o convite datado de 4 de Novembro de 1982, obriga-se a executar todos os trabalhos que constituem essa empreitada, em conformidade com o Caderno de Encargos, pelo preço global de ESC. 4.598.620$00 (QUATRO MILHÕES QUINHENTOS E NOVENTA E OITO MIL SEISCENTOS E VINTE ESCUDOS), no prazo de 180 dias.

Mais declara que renuncia a foro especial e se submete em tudo que respeitar à execução do seu contrato, ao que se achar prescrito na legislação portuguesa em vigor.

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, Lda.
GERÊNCIA

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

"UNIVERSIDADE DO PORTO"
CASA PRIMO MADEIRA

- INSTALAÇÃO ELÉCTRICA -

MEMÓRIA DESCRITIVA

A instalação que nos propomos executar obedece ao Caderno de Encargos e Lista de Medições.

Será realizada dentro das melhores regras da arte, no sentido de se conseguir uma valorização técnica e estética da obra.

CONDUTORES E CABOS

Estes serão de acordo com o pedido no Caderno de Encargos e das marcas nacionais: CEL-CAT, CUNHA BARROS e CABELTE.

CAIXAS

Estas serão de acordo com o pedido no Caderno de Encargos das marcas JSL, SIPE, EEC ou equivalente.

APARELHAGEM

Toda a aparelhagem de manobra e tomadas serão de acordo com o Caderno de Encargos e das marcas SIPE, JSL ou equivalente.

TUBAGEM

Toda a tubagem será constituida por tubos do tipo VD e das marcas SIPE, JSL ou equivalente.

QUADROS ELÉCTRICOS

Serão de acordo com o pedido no Caderno de Encargos constituida

.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

.../...

em chapa de ferro zincor devidamente tratada e pintada.

O seu equipamento será o pedido no Caderno de Encargos.

Os disjuntores serão EBC, SIEMENS ou AEG.

RELÓGIOS

Serão da ROLIM, REGISCONTA ou equivalente.

ARMADURAS

Serão das marcas ELPOR, LUMITEL, OSVALDO MATOS ou equivalente.

SOM

Será da PHILIPS ou equivalente.

DETECÇÃO DE INCÊNDIOS

Será do GRUPO 8, EPS, ou GARLAND, LAIDLEY.

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, Lda.
A GERÊNCIA

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
"UNIVERSIDADE DO PORTO"				
CASA PRIMO MADEIRA				
- INSTALAÇÃO ELÉCTRICA -				
Cap. I				
Tubagem e caixas				
Artº. 1º. Fornecimento e montagem de tubos de plástico do tipo ERFE montado interiormente em roço conforme CE.de:				
16	1620	72$00	116.640$00	
20	1560	75$00	117.000$00	
25	590	80$00	47.200$00	
Artº. 2º. Idem, tipo VD de:				
32	90	99$00	8.910$00	
48	70	103$00	7.210$00	
Artº. 3º. Fornecimento e montagem em vala de tubo de polietileno preto de 4Kg de:				
2"	700	124$00	86.800$00	
4"	120	262$00	31.440$00	
Artº. 4º. Fornecimento e montagem à vista nas condições do C.E de tubo VD, de:				
16	100	72$00	7.200$00	
20	70	75$00	5.250$00	
25	15	80$00	1.200$00	
Artº. 5º. Fornecimento e montagem de caixas de derivação				
			.../...	

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
embebidas, incluindo placas em porcelana:				
c/ 2 entradas	40	273$00	10.920$00	
c/ 3 entradas	120	280$00	33.600$00	
c/ 4 entradas	43	285$00	12.255$00	
c/ 5 entradas	19	290$00	5.510$00	
c/ 6 entradas	7	295$00	2.065$00	
Artº. 6º Fornecimento e montagem à vista de caixas de baquelite conforme C.E:				
c/ 2 entradas	8	442$00	3.536$00	
c/ 3 entradas	20	450$00	9.000$00	
c/ 4 entradas	15	470$00	7.050$00	
c/ 5 entradas	7	490$00	3.430$00	
c/ 6 entradas	4	510$00	2.040$00	
Artº. 7º. Idem, idem, de caixas de baquelite conforme C.E:				
c/ 7 entradas	1	600$00	600$00	
c/ 8 entradas	1	620$00	620$00	
Artº. 8º. Idem, idem, de caixas de visita no exterior conforme C.E.	8	6.325$00	50.600$00	
Artº. 10º. Abertura e tapamento de vala.	850	300$00	255.000$00	
				825.076$00
Cap. II				
Condutores e Cabos				
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Artº. 1º. Fornecimento e montagem enfiada dos seguintes condutores:				
V - 1,5 mm2	3700	16$00	59.200$00	
V - 2,5 mm2	700	19$00	13.300$00	
V - 4 mm2	500	30$00	15.000$00	
V - 10 mm2	70	60$00	4.200$00	
V - 16 mm2	80	80$00	6.400$00	
TV - 0,75 mm ∅	820	14$00	11.480$00	
Artº. 2º. Fornecimento e montagem à vista dos seguintes cabos:				
VV 2x1,5 mm2	200	189$00	37.800$00	
VV 3x1,5 mm2	70	197$00	13.790$00	
VV 4x1,5 mm2	15	205$00	3.075$00	
VV 3x2,5 mm2	140	210$00	29.400$00	
VV 4x2,5 mm2	120	219$00	26.280$00	
VV 5x2,5 mm2	55	234$00	12.870$00	
Artº. 3º. Fornecimento e montagem em vala ou em tubo dos seguintes cabos:				
VAV 3x70+35+T35 mm2	40	1.500$00	60.000$00	
VAV 4x10 mm2	65	311$00	20.215$00	
VAV 4x4 mm2	350	170$00	59.500$00	
VAV 3x4 mm2	100	130$00	13.000$00	
VAV 2x4 mm2	350	111$00	38.850$00	
VAV 4x4+T4	150	200$00	30.000$00	
				454.360$00
Cap. III				
Aparelhagem				
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Artº. 1º. Fornecimento e montagem da seguinte aparelhagem de tipo estanque:				
Interruptores	16	208$00	3.328$00	
Com. escada	3	235$00	705$00	
Tom. monof.c/terra	23	268$00	6.164$00	
Artº. 2º. Idem, idem, da seguinte aparelhagem de comando para montagem embebida:				
Interruptores	19	158$00	3.002$00	
Com. Lustre	20	241$00	4.820$00	
Com. escada	3	188$00	564$00	
Tom. monof. c/ terra	108	217$00	23.436$00	
Botões de pressão	17	145$00	2.465$00	
Rosetas p/telefone c/ 4 bornes.	24	145$00	3.480$00	
				47.964$00
Cap. IV				
Aparelhagem Diversa				
Artº. 1º. Fornecimento e montagem da seguinte aparelhagem:				
- Quadro de alvos c/				
5 nºs.	1	6.200$00	6.200$00	
15 nºs.	1	8.500$00	8.500$00	
- Pára-Raios radioactivo incluindo todos os acessórios conforme C.E.	1	100.000$00	100.000$00	
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
- Radiadores de 1000W	40	5.800$00	232.000$00	
- Amplificador de potência	1	78.000$00	78.000$00	
- Colunas de som	2	5.000$00	10.000$00	
- Microfones dinâmicos	4	13.000$00	52.000$00	
- Bases de mesa p/ microfone	3	3.000$00	9.000$00	
- Coluna extensível para microfone.	1	4.000$00	4.000$00	
- Sistema de pedido de audiência, conforme C.E.	4	14.000$00	56.000$00	
				555.700$00
Cap. V				
Detecção de Incêndio				
Artº. 1º. Fornecimento e montagem do seguinte material:				
- Central.	1	300.000$00	300.000$00	
- Detectores de fases de combustão completos, para montagem embebida.	42	6.000$00	252.000$00	
- Idem, para montagem saliente.	21	6.300$00	132.300$00	
- Indicadores de acção e respectiva armadura para montagem saliente.	10	1.000$00	10.000$00	
- Indicadores de acção e respectiva armadura para montagem embebida.	18	1.200$00	21.600$00	
- Botões de alarme manual para montagem embebida.	3	4.000$00	12.000$00	
- Botões de alarme manual para montagem saliente.	1	4.500$00	4.500$00	
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
- Plavon	1	40.000$00	40.000$00	
- Sirene	1	10.000$00	10.000$00	
- Verificador de detectores c/ garrafa de gás.	1	10.000$00	10.000$00	
				792.400$00
Cap. VI				
Quadros Eléctricos				
Artº. 1º. Fornecimento e montagem dos seguintes quadros:				
Q.G.	1	200.000$00	200.000$00	
Q.1	1	34.000$00	34.000$00	
Q.1.1	1	34.000$00	34.000$00	
Q.2	1	34.000$00	34.000$00	
Q.3	1	34.000$00	34.000$00	
Q.4	1	34.000$00	34.000$00	
				370.000$00
Cap. VII				
Armaduras				
Artº. 1º. Fornecimento e montagem das seguintes armaduras, completamente electrificadas:				
A1 (1x58W)	11	4.000$00	44.000$00	
A2 (60W)	13	1.500$00	19.500$00	
A3 (32+22)	18	3.800$00	68.400$00	
A5 (2x18W)	10	3.500$00	35.000$00	
A6 (1x36W)	11	3.600$00	39.600$00	
				.../...

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
A7 (60W)	8	1.500$00	12.000$00	
A8 (2x36W)	26	4.500$00	117.000$00	
A9 (4x18W)	6	5.000$00	30.000$00	
A10 (4x18W+E)	1	17.000$00	17.000$00	
A11 (2x58W)	4	6.000$00	24.000$00	
A12 (1x36W)	2	3.600$00	7.200$00	
A13 (80W HPL)	23	31.000$00	713.000$00	
A14 (1000 W)	8	15.000$00	120.000$00	
Ls (8+8W)	10	14.000$00	140.000$00	
AE (8W)	8	12.000$00	96.000$00	
Reparação das armaduras (A3) a conservar.	10	3.000$00	30.000$00	
Montagem de ganchos de suspensão para as armaduras Ax.	10	500$00	5.000$00	
				1.517.700$00
Cap. VIII				
Terras				
Artº. 1º. Fornecimento e montagem de electrodos de terra conforme C.E.	1	2.120$00	2.120$00	
Artº. 2º. Fornecimento e montagem de electrodos de terra tipo "piquet" de 1,5 m de comprido, e chicote de 25 m2 para as armaduras de iluminação exterior.	23	1.100$00	25.300$00	
				27.420$00
				.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

DESIGNAÇÃO	QUANTIDADE	PREÇO UNITÁRIO	IMPORTÂNCIAS PARCIAIS	IMPORTÂNCIAS TOTAIS
.../...				
Cap. IX				
Diversos				
Artº. 1º. Fornecimento e montagem na portaria de uma armadura tipo A1: (1x58W) e respectivos circuitos.	1	6.000$00	6.000$00	
Artº. 2º. Idem, na portaria de tomada monofásica c/terra.	1	2.000$00	2.000$00	
				8.000$00

RESUMO

Capítulo I	825.076$00
Capítulo II	454.360$00
Capítulo III	47.964$00
Capítulo IV	555.700$00
Capítulo V	792.400$00
Capítulo VI	370.000$00
Capítulo VII	1.517.700$00
Capítulo VIII	27.420$00
Capítulo IX	8.000$00
TOTAL GERAL	4.598.620$00

Porto, 17 de Novembro de 1982
Costa, Teixeira & Silva, Lda.
A GERÊNCIA

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

"UNIVERSIDADE DO PORTO"
CASA PRIMO MADEIRA

- INSTALAÇÃO ELÉCTRICA -

MEMÓRIA DESCRITIVA

A instalação que nos propomos executar obedece ao Caderno de Encargos e Lista de Medições.

Será realizada dentro das melhores regras da arte, no sentido de se conseguir uma valorização técnica e estética da obra.

CONDUTORES E CABOS

Estes serão de acordo com o pedido no Caderno de Encargos e das marcas nacionais: CEL-CAT, CUNHA BARROS e CABELTE.

CAIXAS

Estas serão de acordo com o pedido no Caderno de Encargos das marcas JSL, SIPE, EBC ou equivalente.

APARELHAGEM

Toda a aparelhagem de manobra e tomadas serão de acordo com o Caderno de Encargos e das marcas SIPE, JSL ou equivalente.

TUBAGEM

Toda a tubagem será constituida por tubos do tipo VD e das marcas SIPE, JSL ou equivalente.

QUADROS ELÉCTRICOS

Serão de acordo com o pedido no Caderno de Encargos constituida

.../...

"PROTÉCNICA"
COSTA, TEIXEIRA & SILVA, L.DA

.../...

em chapa de ferro zincor devidamente tratada e pintada.

O seu equipamento será o pedido no Caderno de Encargos.

Os disjuntores serão BBC, SIEMENS ou AEG.

RELÓGIOS

Serão da ROLIM, REGISCONTA ou equivalente.

ARMADURAS

Serão das marcas ELPOR, LUMITEL, OSVALDO MATOS ou equivalente.

SOM

Será da PHILIPS ou equivalente.

DETECÇÃO DE INCÊNDIOS

Será do GRUPO 8, EPS, ou GARLAND, LAIDLEY.

Porto, 17 de Novembro de 1982

Costa, Teixeira & Silva, Lda.
A GERÊNCIA

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

Á:

DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4º

4000 PORTO

S/ REF.ª

N/ REF.ª

DATA: 17NOV.82

ASSUNTO: PROPOSTA

EX.MO(S) SENHOR(ES)

ELECTROFER, representada por Pereira & Fontes, Ldª com sede na Rua Conde Ferreira, 27 Porto, titular do alvará nº 12861, VI categoria e 6ª subcategoria, depois de ter tomado perfeito conhecimento da empreitada da "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA", obriga-se a executar todos os trabalhos que constituem essa empreitada, em conformidade com o caderno de encargos, pelo preço global de Esc. 4.302.623$00 ---- (Quatro milhões trezentos e dois mil seiscentos e vinte três escudos) no prazo de 180 dias.

Mais declara que reununcia a foro especial e se submete em tudo o que respeitar á execução do seu contrato, ao que se achar prescrito na legislação em vigor.

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, L.da
MONTAGENS ELÉCTRICAS
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-139

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES. LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO

EX.MO(S) SENHOR(ES)

Assunto: "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA"

Cap. I

Tubagem e Caixas

Artº.1º - Fornecimento e montagem de tubos de plástico do tipo ERFE montado interiormente em roço conforme CE. de:

16	1620 x 90$00.....145.800$00
20	1560 x 98$00.....152.880$00
25	590 x 115$00.....67.850$00

Artº.2º - Idem tipo VD de

32	90 x 135$00.....12.150$00
48	70 x 165$00.....11.550$00

Artº.3º - Fornecimento e montagem em vala de tubo de polieteleno preto de 4Kg de:

2"	700m x 120$00.....84.000$00
4"	120m x 210$00.....25.200$00

Artº. 4º - Fornecimento e montagem á vista nas condições do C.E de tubo VD De:

16	100 x 100$00.....10.000$00
20	70 x 117$50.....8.225$00
25	15 x 127$50.....1.912$50

.../////...

630-130

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES. LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO (continuação do Cap.I) ...///...

EX.MO(S) SENHOR(ES)

Artº.5º - Fornecimento e montagem de caixas de derivação, embebidas, incluindo placas de porcelana:

c/2 entradas	40 x 127$50	5.100$00
c/3 "	120 x 151$00	18.120$00
c/4 "	43 x 158$00	6.794$00
c/5 "	19 x 171$00	3.249$00
c/6 "	7 x 177$50	1.242$50

Artº.6º - Fornecimento e montagem á vista de caixas de baquelite conforme C.E

c/2 entradas	8 x 217$50	1.740$00
c/3 "	20 x 247$50	4.950$00
c/4 "	15 x 262$50	3.937$50
c/5 "	7 x 272$50	1.907$50
c/6 "	4 x 290$00	1.160$00

Artº.7º - Idem,idem de caixas de baquelite conforme C.E

c/7 entradas	1 x 315$00	315$00
c/8 "	1 x 345$00	345$00

Artº.8º - Idem, idem de caixas de visita no exterior conforme C.E. 8 x 8.100$00 ..... 64.800$00

Artº.10º - Abertura e tapamento de vala 850m x 160$00 ..... 136.000$00

...///...

630-118

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO ...///...

EX.MO(S) SENHOR(ES)

CAPÍTULO II
CONDUTORES E CABOS

Artº.1º - Fornecimento e montagem em fiada dos seguintes condutores:

V-1,5 mm2	3700 x 13$00	48.100$00
V-2,5 mm2	700 x 18$00	12.600$00
V-4 mm2	500 x 28$00	14.000$00
V-10 mm2	70 x 51$50	3.605$00
V-16 mm2	80 x 72$50	5.800$00
TV-0,75 mm ø	820 x 30$00	24.600$00

Artº.2º - Fornecimento e montagem á vista dos seguintes cabos:

VV 2x1,5 mm2	200 x 142$50	28.500$00
VV 3x1,5 mm2	70 x 156$00	10.920$00
VV 4x1,5 mm2	15 x 174$00	2.610$00
VV 3x2,5 mm2	140 x 182$50	25.550$00
VV 4x2,5 mm2	120 x 196$00	23.520$00
VV 5x2,5 mm2	55 x 212$50	11.687$50

Artº.3º - Fornecimento e montagem em vala ou em tubo dos seguintes cabos:

VAV 3x70+35+T35 mm2	40 x 1.500$00	60.000$00
VAV 4x10 mm2	65 x 490$00	31.850$00
VAV 4x4 mm2	350 x 147$50	51.625$00
VAV 3x4 mm2	100 x 132$50	13.250$00
VAV 2x4 mm2	350 x 150$00	52.500$00
VAV 4x4+T 4	150 x 170$00	25.500$00

CAPÍTULO III
APARELHAGEM

Artº.1º - Fornecimento e montagem da seguinte aparelhagem de tipo estanque:

Interruptores	16 x 227$50	3.640$00
Com.escada	3 x 250$00	750$00
Tom.monof. c/terra	23 x 270$00	6.210$00

...///...

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO (continuação do Cap.III) ...///...

EX.MO(S) SENHOR(ES)

Artº.2º - Idem, idem da seguinte aparelhagem de comando para montagem e bebida.

Interruptores	19 x 162$50	3.087$50
Com.lustre	20 x 240$00	4.800$00
Com.escada	3 x 160$00	480$00
Tom.monof. c/terra	108 x 187$50	20.250$00
Botões de pressão	17 x 130$00	2.210$00
Rosetas p/telefone c/4 bornes.	24 x 144$00	3.456$00

CAPÍTULO IV
APARELHAGEM DIVERSA

Artº.1º - Fornecimento e montagem da seguinte aparelhagem:

-Quadro de alvos c/5 nºs	1 x 3.500$00	3.500$00
c/15 nºs	1 x 7.000$00	7.000$00
-Pára raios radioactivo incluindo todos os acessórios conforme C.E.	1 x 75.000$00	75.000$00
-Radiadores de 1000W	40 x 9.600$00	384.000$00
-Amplficador de potência	1 x 122.000$00	122.000$00
-Colunas de Som	2 x 14.000$00	28.000$00
-Microfones dinâmicos	4 x 4.100$00	16.400$00
-Bases de mesa p/micro fone	3 x 1.700$00	5.100$00
-Coluna extensível para microfone	1 x 2.400$00	2.400$00
-Sistema de pedito de audiência. conforme C.E.	4 x 14.750$00	59.000$00

CAPÍTULO V
DETECÇÃO DE INCÊNDIO

Artº.1º - Fornecimento e montagem do seguinte material

-Central	1 x 485.520$00	485.520$00

...///...

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO (continuação do Cap.V) ...///...

EX.MO(S) SENHOR(ES)

-Detectores de fases de combustão completos, para montagem embebida.	42 x 6.420$00	269.640$00
-Idem para montagem saliente	21 x 6,420$00	134.820$00
-Indicadores de acção e respectiva armadura para montagem saliente.	10 x 1.332$00	13.320$00
-Indicadores de acção e respectiva armadura para montagem embebida.	18 x 1.332$00	23.976$00
-Botões de alarme manual para montagem embebida	3 x 1.848$00	5.544$00
-Botões de alarme manual para montagem saliente	1 x 1.848$00	1.848$00
-Plavom	1 x 2.520$00	2.520$00
-Sirene	1 x 1.956$00	1.956$00
-Verificador de detectores c/garrafa de gás.	1 x 33.600$00	33.600$00

CAPÍTULO VI
QUADROS ELÉCTRICOS

Art.º.1º - Fornecimento e montagem dos seguintes quadros.

Q.G.	1 x 190.000$00	190.000$00
Q.1	1 x 160.000$00	160.000$00
Q.1.1	1 x 19.500$00	19.500$00
Q.2	1 x 26.000$00	26.000$00
Q.3	1 x 45.000$00	45.000$00
Q.4	1 x 42.000$00	42.000$00

...///...

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ORÇAMENTO ...///...

EX.MO(S) SENHOR(ES)

CAPÍTULO VII
ARMADURAS

rtº.1º - Fornecimento e montagem das seguintes armaduras, completamente eléctrificadas.		
A1 (1x58W)	11 x 2.650$00	29.150$00
A2 (60W)	13 x 1.050$00	13.650$00
A3 (32+22)	18 x 3.900$00	70.200$00
A5 (2x18W)	10 x 2.100$00	21.000$00
A6 (1x36W)	11 x 1.400$00	15.400$00
A7 (60W)	8 x 1.300$00	10.400$00
A8 (2x36W)	26 x 3.150$00	81.900$00
A9 (4x18W)	6 x 3.400$00	20.400$00
A10 (4x18W+E)	1 x 11.750$00	11.750$00
A11 (2x58W)	4 x 3.300$00	13.200$00
A12 (1x36W)	2 x 3.500$00	7.000$00
A13 (80W HPL)	23 x 13.950$00	320.850$00
A14 (1000W)	8 x 5.200$00	41.600$00
Ls (8+8W)	10 x 8.200$00	82.000$00
AE (8W)	8 x 7.525$00	60.200$00
Reparação das armaduras (Ax) a conservar	10 x 950$00	9.500$00
-Montagem de ganchos de suspensão para as armaduras Ax.	10 x 550$00	5.500$00

CAPÍTULO VIII
TERRAS

Artº.1º - Fornecimento e montagem de eléctrodos de terra conforme C.E.	1 x 9750$00	9.750$00
Artº.2º - Fornecimento e montagem de eléctrodos de terra tipo "pique" de 1,5m de comprido, e chicote de 25 m2 para as armaduras de iluminação exterior.	23 x 2.400$00	55.200$00

...///...

630-920

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MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

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ORÇAMENTO

.../// ...

EX.MO(S) SENHOR(ES)

CAPÍTULO IX

DIVERSOS

Artº.1º - Fornecimento e montagem na portaria de uma armadura tipo A1 (1x58W) e respectivos circuitos	1 x 4.750$00.....	4.750$00
Artº.2º - Idem, na portaria de tomada monofásica c/terra.	1 x 12.50 $00.....	12.50 $00
	Total de todos os cap.	4.302.623$00

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, LDA
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

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MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

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Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

ORÇAMENTO

EX.MO(S) SENHOR(ES)

Assunto: "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO CASA PRIMO MADEIRA"

RESUMO

CAPÍTULO	I	769.228$00
"	II	446.217$50
"	III	44.883$50
"	IV	702.400$00
"	V	972.744$00
"	VI	482.500$00
"	VII	813.700$00
"	VIII	64.950$00
"	IX	6.000$00
		4.302.623$00

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, L.da
MONTAGENS ELECTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-116

17 NOV. 1982

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

S/ REF.ª

N/ REF.ª

DATA: 17NOV.82

ASSUNTO: DECLARAÇÃO

EX.MO(S) SENHOR(ES)

ELECTROFER, de Pereira & Fontes, Ldª com sede na Rua Conde Ferreira, 27 Porto, declara que se obriga a pagar ao seu pessoal na empreitada da "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO--CASA PRIMO MADEIRA", salários não inferiores aos mínimos praticados no Local da Obra para diferentes profissoẽs e categorias profissionais.

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, L.da
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-214

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

S/ REF.ª

N/ REF.ª

DATA: 17NOV.82

ASSUNTO: DECLARAÇÃO

EX.MO(S) SENHOR(ES)

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Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, LDA
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-912

17. NOV. 1982

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MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES, LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

Á:
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
Rua Júlio Dinis, 826-4º
4 000 PORTO

S/ REF.ª

N/ REF.ª

DATA: 17NOV.82

ASSUNTO: MEMÓRIA DESCRITIVA

EX.MO(S) SENHOR(ES)

ELECTROFER - PEREIRA & FONTES, Ldª, propõe-se aplicar na execução da empreitada da "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA", os seguintes materiais:

CABOS---	ÁVILA OU CEL-CAT
CAIXAS--	E.C.
APARELHAGEM DE MANOBRA	J.B.CORSINO OU SIPE
PÁRA-RAIOS	SORMAE
DET. INCÊNDIO	GARLAND LAYDLEY
SOM	PHILIPS
DISJUNTORES DE POTÊNCIA	MERLIN GERIN
DISJUNTORES RESTANTES 9KA	B.B.C
ARMADURAS EXT.	SCHERÉDER e SOVIL
" INT.	OSVALDO MATOS e SOMIL

além de pessoal devidamente especializado de acordo com o exigido no respectivo caderno de encargos.

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, LDA.
MONTAGENS ELÉCTRICAS
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-110

ELECTROFER

MONTAGENS ELÉCTRICAS

ELECTRICIDADE EM TODAS AS APLICAÇÕES

PEREIRA & FONTES. LDA.

Escritório: Rua Conde Ferreira, 27 • Telef. 560660

Armazém: Rua Joaquim António de Aguiar, 230 • Telef. 53470

4300 PORTO

Á:

DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE

Rua Júlio Dinis, 826-4º

4 000 PORTO

S/ REF.ª

N/ REF.ª

DATA: 17NOV.82

ASSUNTO: MEMÓRIA DESCRITIVA

EX.MO(S) SENHOR(ES)

ELECTROFER - PEREIRA & FONTES, Ldª, propõe-se aplicar na execução da empreitada da "INSTALAÇÃO ELÉCTRICA DA UNIVERSIDADE DO PORTO - CASA PRIMO MADEIRA", os seguintes materiais:

CABOS---	ÁVILA OU CEL-CAT
CAIXAS--	E.C.
APARELHAGEM DE MANOBRA	J.B.CORSINO OU SIPE
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DISJUNTORES DE POTÊNCIA	MERLIN GERIN
DISJUNTORES RESTANTES 9KA	B.B.C
ARMADURAS EXT.	SCHERÉDER e SOVIL
" INT.	OSVALDO MATOS e SOMIL

além de pessoal devidamente especializado de acordo com o exigido no respectivo caderno de encargos.

Porto, 17 de Novembro de 1982

ELECTROFER
PEREIRA & FONTES, Ld.ª
ELECTRICIDADE EM TODAS AS APLICAÇÕES
Rua Conde Ferreira, 27
Telefone 560660 — PORTO

630-108

SOCIEDADE DE CONSTRUÇÕES **SOARES DA COSTA** SARL

SEDE SOCIAL/HEAD OFFICE Av. da Boavista, 2300 • 4100 PORTO • PORTUGAL
Apartado 161 • 4003 PORTO CODEX
Telef. 672341 • Telex 25363 COSTAS P

DELEGAÇÃO/BRANCH OFFICE Rua do Actor Taborda, 27-4.º
1000 LISBOA • PORTUGAL
Telef. 579018 • Telex 18500 COSTAS P

18.11.82
à Electro-
-Mecânica
18/11/82

À

Direcção das Construções Escolares do Norte
Rua Júlio Dinis, 826 - 4º
4000 PORTO

Arquive

v/ref.ª emitido por DIRECÇÃO ELECTROMECÂNICA

n/ref.ª FS/mh - DE - **360** data Rechousa, 16 de Novembro de 1982

assunto

Exmos. Senhores,

Acusamos a recepção do v/ ofício em referência, que muito agradecemos, para a empreitada de "Universidade do Porto" - Casa Primo Madeira - Instalação Eléctrica.
".

Lamentamos informar que dado o volume de trabalho do departamento de orçamentos não nos é possível satisfazer o pedido formulado por V. Exas.

Esperando continuar a merecer a confiança que em nós têm depositado, desde já agradecemos o favor de futuras consultas.

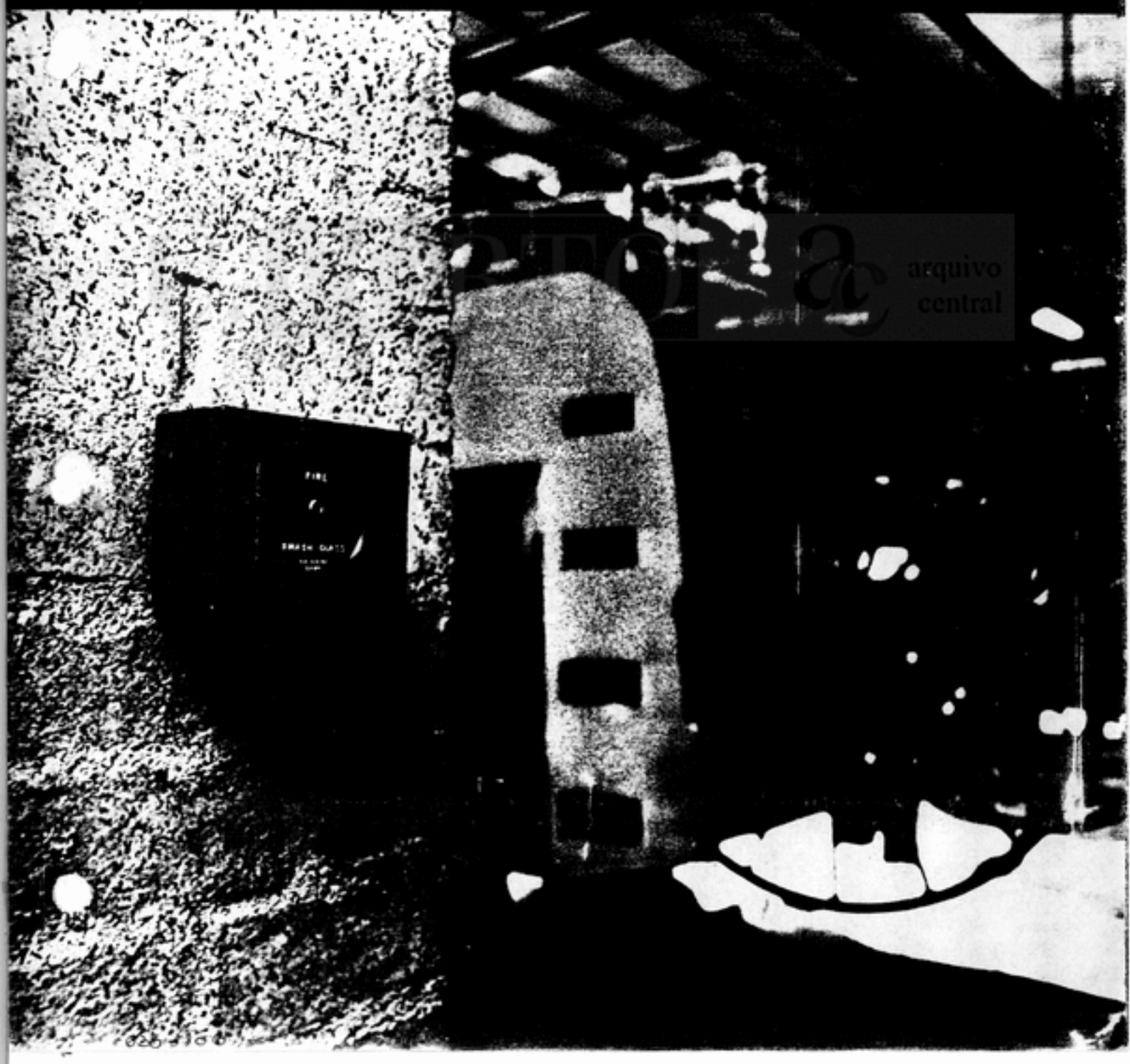
Com os nossos melhores cumprimentos, subscrevemo-nos com consideração.

S. C. SOARES DA COSTA, SARL.

A. Ferreira da Silva
(Director)

MINISTÉRIO DA HABITAÇÃO E OBRAS PÚBLICAS E TRANSPORTES
DIRECÇÃO - GERAL DAS CONSTRUÇÕES ESCOLARES
DIRECÇÃO DAS CONSTRUÇÕES ESCOLARES DO NORTE
17 NOV. 1982
N.º Proc.

CHLORIDE GENT



Every year fire claims many lives and destroys property worth many millions of pounds. In recent years the annual total for Great Britain has consistently topped £200,000,000 – the greater part of this accounted for by fires causing damage of £15,000 or more.*

This is a burden which industry cannot afford to bear and much of the damage is prevented when immediate warning can be given at the start of a fire. There are, of course, requirements laid down by law for the provision of fire alarms based, in general, on the minimum necessary to save life in occupied premises. But 60%* of fires start out of working hours and it can be a sound business decision to install a modern, automatic fire alarm system, on duty 24 hours a day and connected, where appropriate, direct to the Fire Station.

Effective, reliable fire alarm systems, even of the simplest kind, need careful planning and siting. Chloride Gent can offer expertise based on many years of pioneering experience in the fire prevention business and our technical representatives are always available to advise you.

This leaflet gives brief details of a few of our products representing the principal elements which may go to make up a fire alarm system. Full technical details of these and the rest of our very comprehensive range of equipment can be supplied on request.

Manual Alarm Point – Model 1102
This is the simplest form of fire alarm initiating point. Fixed at a height of 4ft. 6 ins. from the floor, in easily accessible, well lit and conspicuous positions these should be located on exit routes, floor landings of staircases and exits to the street. Manual Alarm Points can be used in combination with automatic Smoke and Heat Detectors.

The Chloride Gent Model 1102 has been selected by the Design Council for display in the Design Centre, London.

* Source Fire Protection Association

630-105

CHLORIDE GENT

Chloride Gent Limited
Temple Road,
Leicester LE5 4JF
Telephone: Head Office: 0533 730251
Service Dept: 0533 734222
Telex: 34301

London Office 26/28 Eden Grove, Holloway,
London N7 8EF Telephone: 01-607 5475 (6 lines)
Telex: 262265/Gent London

Birmingham Office 280 Windsor Street,
Nechells,
Birmingham B7 4DG
Telephone: 021 359 8307/8

Bristol Office 16 Whitehouse Street, Bedminster,
Bristol Telephone: 0272 634301

Glasgow Office 134 Clydeholm Road,
Glasgow, G14 0QF Telephone: 041 954 2393/4

Newcastle on Tyne Office Tangent House,
Leazes Park Road, Newcastle on Tyne NE1 4PG
Telephone: 0632 320135 & 321068

Belfast Office R Taylor & Company,
10/12 Edward Street BT1 2QA
Telephone: 0232 31431 (3 lines)

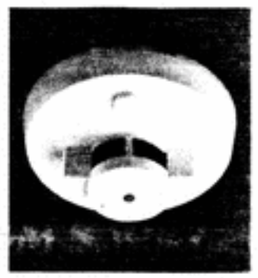
Export Office
Telephone: 0533 735121 Telex: 342367

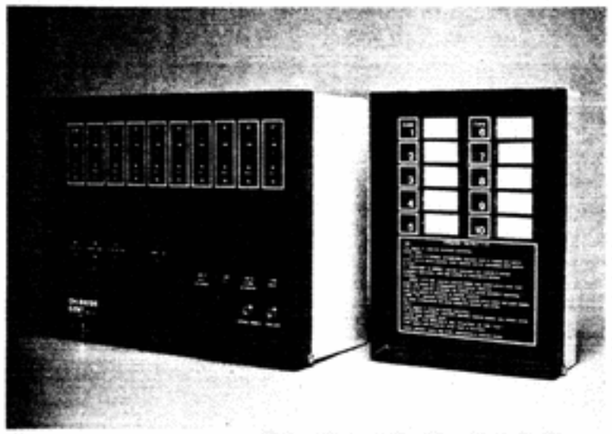
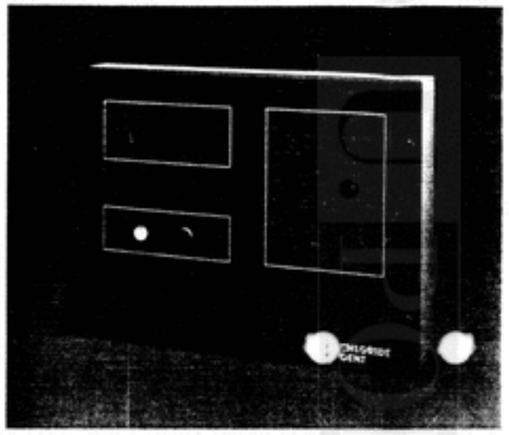
East Midlands Region Co-ordinator, Leicester
Telephone: 0533 738388 Telex: 34301

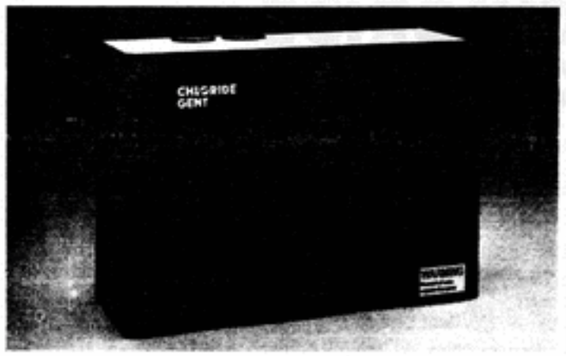
North West Region Co-ordinator, Leicester
Telephone: 0533 738397 Telex: 34301

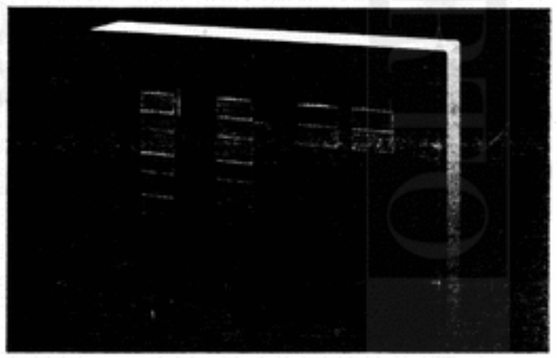




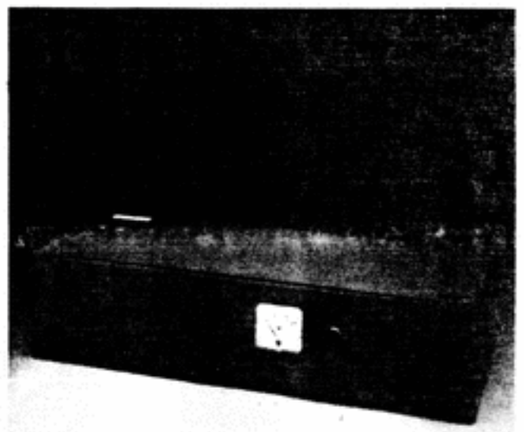







CHLORIDE GENT



Top Row
Code 7105-01 Heat Detector
Set to a nominal operating temperature of 57°C (135°F) to give the best possible results for normal fire alarm purposes, consistent with early warning and absence of false alarms approved to BS 5445: Part 5: 1977, EN54: Part 5.

Code 7201-01 Ionisation Chamber Smoke Detector
Developed around a completely new concept of reference chamber and has been designed to meet the requirements of BS 5446: Part 1: 1977.

Code 7220-01 Optical Smoke Detector
An optical detector particularly effective in the early detection of slow smouldering fires, for protection of life and property.
One of the family of detectors which plugs into a common base unit, Code 7912-01, for ease of installation and maintenance.

Code 7120-01 Heat Detector
Rate of Rise heat detectors are set to provide a high degree of protection in areas where the rate of rise in temperature of the hot gases exceeds a predetermined normal rise.
Designed for ease of installation, maintenance and servicing.

Top Row
Code 77 Heat Detector
A neat and inconspicuous detector set to operate at 135°F.

Code 3040 and 3042T Two-Wire Optical Smoke Detector
Operates on the principle of light scatter. Also incorporates a heat detector.

Centre Row
Code 3215-01 Multi-Zone Indicator Panel
Developed to comply with BS 3116: Part 4: 1974 for use in systems installed to BS 5839: Part 1: 1980, this unique fire alarm indicator panel is modular in design and will accept up to 10 zones.

Code 3225-01 Single Zone Indicator Panel
An attractive, high quality and reliable unit also designed to comply with BS 3116: Part 4: 1974 for use in systems installed to BS 5839: Part 1: 1980. Completely self contained, this fire alarm control unit is simple to install and operate.

Bottom Row
Code 75 Mk II Fire Alarm Unit
Developed for use in smaller establishments covered by the Fire Precautions Act, where there is no requirement for smoke detection. Incorporates manual call point, alarm bell, batteries and charger unit.

Code 3213/4-01 Fire Alarm Control and Indicator Panel
A fire alarm indicator panel designed to operate with two-wire open circuit zone wiring. Provision is made for monitoring both initiation and alarm circuits. The Code 3214 version has F.O.C. approval.

Top
Code 5208 Battery and Charger Unit
A compact, attractively styled unit supplied complete with sealed lead acid batteries which require no maintenance.

Bottom
Code 5202-01 Battery and Charger Unit
A self-contained unit ideally suited to fire alarm installations. Space in the cabinet allows for accommodating lead acid or nickel cadmium batteries.
The charging rate is automatically controlled to suit any state of the batteries and very little maintenance is needed.

630 - 103

Top Left
Code 505 Dome Bell
A reliable efficient unit giving a loud clear ring of excellent tone and features a robust striker mechanism.

Bottom Left
Code 620 Tangent Bell
Designed to produce a loud clear ring. Elegantly styled, but rugged enough for most arduous conditions.

Top Centre
Code 1500 High Frequency Siren
A small high-frequency siren easily audible above high levels of industrial noise.

Top Right
Code 1501 Siren
A miniature siren with a large sound output, easily distinguishable from other sound signals. Ideal for most indoor locations.

Bottom Right
Code 2500 Low Frequency Warbler
An audible alarm unit for use in fire alarm systems, start and cease work systems, class change systems or any system requiring a distinctive signal. Having four different sound modes with the advantage of high sound output and low current consumption.
Operating frequencies have been selected to comply with the requirements of BS 5839: Part 1: 1980.

CHLORIDE GENT

3213D Fire Alarm Indicator Panel

The Chloride Gent 3213D Fire Alarm Indicator Panel has been developed in order to comply with the requirements of the draft standard for fire alarm systems, intended for the protection of life.

The unit is designed to operate with two wire, open circuit, zone wiring. Initiating circuits are monitored by a low voltage direct current, enabling line faults to be indicated.

Featuring a modern, modular, printed circuit board construction, the 3213D panel allows flexibility combined with ease of maintenance.

The 3213D panel is fully compatible with the wide range of Chloride Gent fire alarm initiating devices designed to operate in open circuit systems.

630-101

Operation

Only two conductors are required for each zone or area of the premises to be protected, these being connected to open circuit type trigger devices, connected in parallel (no wiring spurs are permitted) terminating in an 'end of line' resistor unit.

When the nominal 24 volt D.C. supply is healthy a small direct current is applied to each alarm initiating circuit to monitor the lines and power smoke detectors (when fitted).

When a trigger device operates, a relay in the Control and Indicator Panel is energised to give both 'zone' designation and 'fire' signals and initiate the alarm sounders. Any disconnection, or line break will result in the illumination of the appropriate zone indicator as well as an amber zone fault indicator. At the same time a steady whistle is sounded from within the panel. The initiation of a Fire Alarm from one zone overrides a Fault indication from any other zone.

Standard Features

Zone Indication – indication of initiating circuit location.

Fire Indicator – indication of an alarm condition in conjunction with appropriate zone indicator(s).

Zone Fault Indicator – indication of fault condition in conjunction with appropriate zone indicator(s).

Supply Fault Indicator – indication of AC or DC power failure.

Alarm Sounder Fault – monitoring of the wiring to master alarm sounders.

Controls

Zone Reset Push Button.

Silence Alarm Sounder Push Button.

Cancel fault sounder Push Button.

The above controls are protected against unauthorised operation by means of a key operated security switch.

Optional Facilities

Sectionalized alarm sounder circuits with monitoring and reset facilities.

General Alarm key switch.

Manned Centre Link, with reset control.

Lamp testing facility

Specification

Case – Sheet Steel, stove enamelled in textured grey, shade 00A09 to BS4800. Front plate fitted with visual indicators 56mm (2¼ ins.) x 28mm (1⅛ ins.) over duplicated lamps and with push buttons and key switch.

Cable Entry – 20mm clearance conduit holes are provided in top of case, fitted with polythene blind bushes. The case can be inverted where entry is required from below.

Terminals – To accommodate 2 cables with core cross sectional area of 1.5mm^2

System supply voltage — 24-volts DC nominal.

Maximum Line Loop Resistance — 100 ohms for each zone circuit alarm initiating loop.

Maximum number of Smoke Detectors — 30 in any one zone circuit.

Dimensions

Standard surface fixing Panel with no optional extras (see table below).

Standard flush fixing Panel with no optional extras

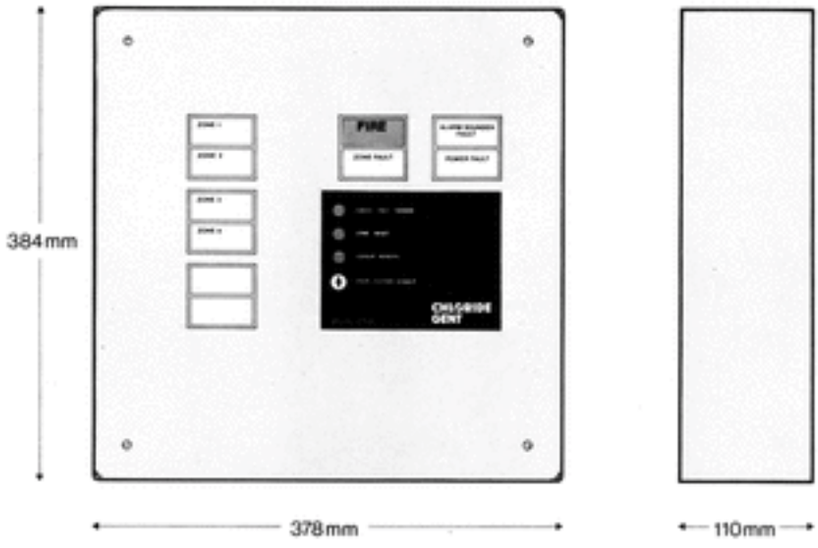
Box width and height as for surface fixing.

Box depth 110mm (4 ⅜ ins).

Front Panel – add 22mm (⅞ ins) to above width and height dimensions.

For panels with 3 or 5 zones, a 4 or 6 zone panel is supplied. The next higher even number applies as all zone components are fitted in pairs. Panels with more than 12 zones are supplied in multiples of 6 zones.

Number of Zones	Zone Indicator arrangement in vertical rows	Overall Dimensions					
		Width		Height		Depth	
		mm	ins	mm	ins	mm	ins
1–6	1 row of 6	378	14⅞	384	15⅛	110	4⅜
7–12	2 rows of 6	536	21⅛	384	15⅛	110	4⅜



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Publication No. 1025 March 1979.

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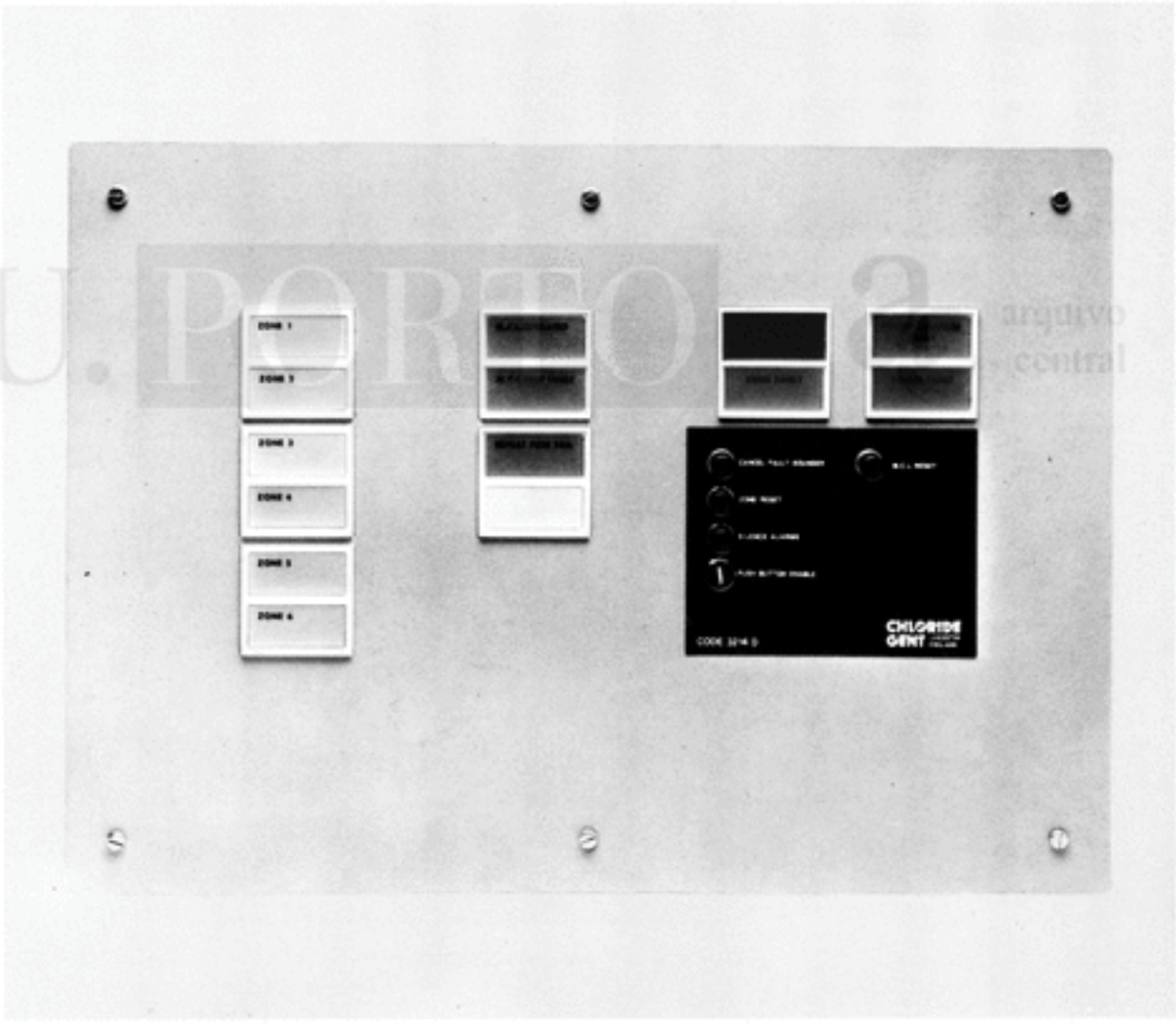
CHLORIDE GENT

3214D Fire Alarm Control and Indicating Panel



The Chloride Gent 3214D Fire Alarm Indicator Panel has been developed in order to comply with the rigorous requirements of BS.3116 Part 4 – Automatic Fire Alarm Systems in buildings.

The Unit is designed to operate with two wire, open circuit, zone wiring. Initiating circuits are monitored by a low voltage direct current, enabling line faults to be indicated.

Featuring a modern modular, printed circuit board construction using selected high grade components the 3214D panel allows flexibility combined with ease of maintenance.

The 3214D Panel is fully compatible with the wide range of Chloride Gent fire alarm initiating devices designed to operate in open circuit systems.

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Operation

Only two conductors are required for the trigger devices in each zone or area of the premises to be protected. These devices are open circuit type connected in parallel (no wiring spurs are permitted). Each zone must terminate in an 'end of line' resistor unit.

When the nominal 24V DC supply is healthy a small direct current is applied to each alarm initiating circuit to monitor the lines and supply power to smoke detectors (when fitted).

When a trigger device operates, a relay in the Control and Indicator Panel is energised to give both 'zone' designation and 'fire' signals and initiate all alarm sounders (which are connected to their own monitored 2-wire circuit). Any disconnection, or line break will result in the illumination of the appropriate zone indicator as well as an amber zone fault indicator. At the same time a steady whistle is sounded from within the panel. The initiation of a Fire Alarm from one zone overrides a fault indication from any other zone.

Standard Features

Zone Indication – indication of initiating circuit location.
Fire Indicator – indication of an alarm condition in conjunction with appropriate zone indicator(s).
Supply Fault Indicator – indication of AC or DC power failure.
Alarm Sounder Fault – monitoring of the wiring to master alarm sounders.

Controls

Zone Reset Push Button.
Silence Alarm Sounder Push Button.
Cancel Fault Sounder Push Button.

The above controls are protected against unauthorised operation by means of a key operated security switch.

Since the 3214D Control and Indicating Panel is intended for the protection of unoccupied premises it is normal for a manned centre link with independent reset and fault indication to be incorporated.

Optional Facilities

Sectionalized alarm sounder circuits with monitoring and reset facilities.

General Alarm Key Switch.

Unit supplied without Manned Centre Link, with reset control.

Lamp testing facility.

Zone Inhibit – (for use on larger installations) to avoid unnecessary power consumption caused by multiple fire signals being initiated from a single outbreak.

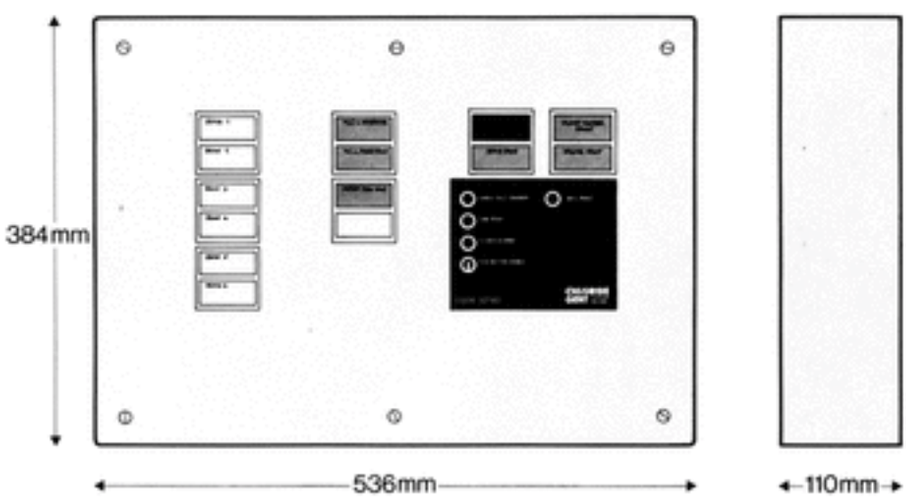
Specification

Components – Wherever possible high grade components complying with BS.9000 are incorporated.
Maximum Line Loop Resistance – 100-ohms for each zone circuit alarm initiating loop.
Maximum number of Smoke Detectors – 30 in any one zone circuit.
System supply voltage – 24-volts D.C. nominal, provided by charging equipment and batteries *all of which must conform to the requirements of BS.3116 Part 4.*
Terminals – To accommodate 2 cables with core cross sectional area of 1.5mm^2.
Cable entry – 20mm clearance conduit holes are provided in top of case, fitted with polythene blind bushes. The case can be inverted where entry is required from below.
Case – Sheet steel, stove enamelled in textured grey, shade 00A09 to BS.4800.

Dimensions

Standard surface fixing Panel with no optional extras (see table below).
When manned centre link is not included, case width is reduced by 158mm (6¼ ins).
Standard flush fixing Panel with no optional extras.
Front plate $\frac{7}{8}$ ins on surface fixing dimensions.
Box width and height as for surface fixing.
Box depth 110mm (4⅜ ins)
For panels with 3 or 5 zones, a 4 or 6 zone panel is supplied. The next higher even number applies as all zone components are fitted in pairs. Panels with more than 12 zones are supplied in multiples of 6 zones.

Number of Zones	Zone Indicator arrangement in vertical rows	Overall Dimensions					
		Width		Height		Depth	
		mm	ins	mm	ins	mm	ins
1–6	1 row of 6	536	21⅛	384	15⅛	110	4⅜
7–12	2 rows of 6	613	24⅛	384	15⅛	110	4⅜



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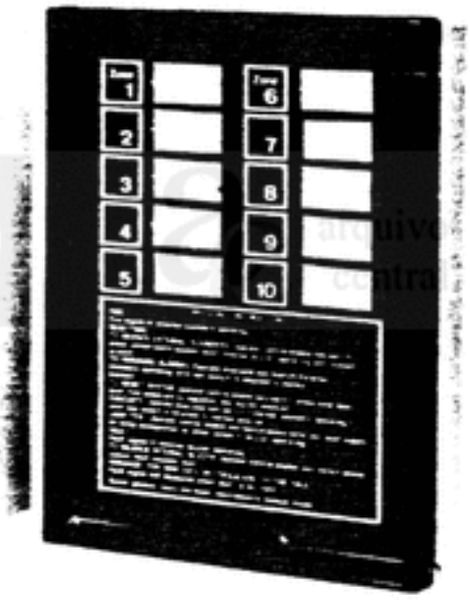
CHLORIDE GENT

3215 Multi-zone Control Indicator Publication 1043



The Chloride Gent 3215 Multi-zone Indicator Panel has been developed to provide a reliable, attractive, high quality unit which is simple to install and to operate. The open circuit monitored principle is used in respect of trigger devices with open/short-circuit monitoring of the alarm sounder circuits.

One unit will cater for 1-10 zones based on the employment of plug-in modules. Installations requiring more than 10 zones can utilise the appropriate number of panels mounted as a group.

The unit is surface mounted and provides a completely self-contained fire alarm control unit, incorporating fire signals, fault signals, supply on signals, internal buzzer, internal battery, reset buttons and key-operated Evacuate and Control Enable switches.

Any compatible two-wire trigger devices such as ionisation or optical smoke detectors, fixed temperature or rate of rise heat detectors, or manual call points can be used. The alarm sounder circuit will handle bells, sirens or warblers, within the limits of the maximum output current.

Operating instructions are featured on the front of a separate designation panel. This panel includes log book, installation notes, maintenance manual, spare fuses and spare glasses.

The requirements of the contractor, architect, stockist, consultant and end user, have been taken into account.

Standards
The 3215 Panel has been designed to comply with the following standards.
1. The requirements of BS3116 Part 4.
2. For use in systems installed to BS5839.
3. To comply with the Health and Safety at Work Act.
4. To comply with FOC requirements.

3215 Multi-zone Control Indicator

Operation

Two conductors are required for each zone or area of the premises to be protected for the trigger circuits, and two conductors for each alarm sounder circuit – no wiring spurs permitted – with each circuit terminating in an End-of-Line Resistor Unit.

A small direct current is passed through each alarm initiating circuit to monitor the lines and power the detectors (when fitted). When a trigger device operates, the appropriate zone's 'Fire' lamps are illuminated (light emitting diode units) and the alarm sounders operate.

To silence the alarm sounders, the Control Enable key-switch should be operated followed by the Cancel Alarm Sounders push. Operating this push button, as well as silencing the audible alarm sounders, brings into operation the indicator's internal supervisory sounder.

When the emergency has been dealt with and the trigger device returned to the normal, non-operated state, then the zone can be reset. To reset the zone again the Control Enable key-switch is operated followed by the Zone Reset push. Operation of this push extinguishes the 'Fire' LEDs and the supervisory buzzer silences, thus returning the system to normal.

Alternative Operation of External Sounders.

Comprehensive alternative sounder operations are incorporated as standard. Simply by interlinking between terminals the following facilities are available:- Sector ringing, Two-stage ringing and Timed 2-stage ringing.

1. Sector ringing. Sounders in area of fire emergency only operate steadily.

2. Two-stage ringing. Sounders in area of fire emergency operate steadily. Sounders in all other areas operate in a pulsing mode.

3. Timed 2-stage ringing. Sounder response as (1) or (2) above initially but, after a predetermined period (between 5 and 15 minutes), all sounders operate steadily.

NOTE. Separate terminals are provided for a master sounder which can be fitted adjacent to the indicator panel. This operates continuously irrespective of the sound mode employed.

Additional Facilities Provided 'As Standard'

1. Lamp test push button – to test all the LEDs on the panel.

2. Key operated evacuation switch – this switch is not controlled via the Control Enable key-switch, thus enabling the alarms to be sounded for evacuation purposes at all times. This switch can also be used to re-sound the alarms.

3. Clean single pole change-over contacts – for operation of a Manned Centre Link, automatic door closers, or other ancillary equipment.

4. External battery and charger – the unit can be used with an external battery and charger in place of the internal battery should a larger system of audible sounders be required. The external battery/charger should be monitored and a fault signal fed back to the terminals provided, in order to comply with BS.5839.

5. 19" Rack mounting – the unit can also be mounted in standard 19" racks, by using a modification kit.

Fault Indication

Fault indication is given for the following:-

a) Open circuit on trigger device wiring.
b) Open or short circuit faults on all alarm sounder wiring.
c) Mains failure.
d) Battery disconnection – internal battery only.
e) Charge current failure.
f) Fuse failure.
g) Earth fault.

Alarm sounder and trigger circuit failures are indicated by the zone fault lamps in conjunction with the master LED fault lamps and the sounding of the buzzer within the panel. The master LED amber fault lamps indicate the following:-

a) Earth fault.
b) Supply fault.
c) Sounder fault.

In addition, a normally illuminated pair of green 'Supply On' LEDs are fitted and these will extinguish whenever there is a supply fault.

Battery capacity = 10 ampere hours.

NOTE. To protect the battery against over discharge an automatic cut-off feature is fitted. Hence the maximum usable capacity = 9.5 Ah.

Quiescent Load (in mains failure state)
Panel = 140mA (0.14A)
Each zone = 17mA (0.017A)
Each detector = 100 micro-amps (0.0001A) – dependent on type.

Therefore a fully equipped 10-zone Panel with 30 Smoke Detectors per zone has the following quiescent load:-

Panel = 140mA
10 zones @ 17mA = 170mA
300 Smoke Detectors @ 0.0001 amps = 30mA
Total = 340mA × 24 hours = 8.16 ampere hours (Ah)

Alarm Load

Capacity remaining in a fully equipped 10 zone panel with 30 Smoke Detectors per zone after 24 hour mains failure.
= 9.5Ah-8.16Ah
= 1.34Ah.

Current consumption per zone in 'Fired' condition (i.e. in Alarm State)
= 55mA per zone.

Maximum Alarm Load (with 2 zones operated) for:-

a) 1 hour = 1.0 amp.
b) ½ hour = 2.0 amps.

NOTE: 2 amps is the maximum recommended alarm output of the 3215 Panel when using the Standard 10 ampere hour capacity internal sealed lead acid battery.

Peripheral Equipment.

Suitable for operating with the following Chloride Gent Units:-

a) Trigger devices.

i) 7201-01 Ionisation Smoke Detectors.
ii) 7220-01 Optical Smoke Detectors.
iii) 30-42 Optical Smoke Detectors.
iv) 7105-01/03 Heat Detectors.
v) 7120-01 Rate of Rise Heat Detectors.
vi) 1102 Manual Call Points.

b) Sounders.

i) 505 Bells polarised.
ii) 620 Bells polarised.
iii) 2500 Warbler polarised.
iv) 2403 Mini-Siren Polarised.

c) Ancillary.

i) 9122-02 2K2 End of Line Resistors.
ii) 9122-03 22K End of Line Resistors.
iii) Polarised 1396 Relays for external switching.
iv) Manned Centre Link Facilities.
v) 8100 Site plan.
vi) Polarised 207 luminous alarm signal.

Maximum number of Peripherals.

Trigger devices – per zone = 30 off.

NOTE: Each zone may have up to 3mA of detector load. This represents approximately 30 of any mixture of 7201-01 Ionisation Smoke Detectors, 7220-01 Optical Smoke Detectors, 7105-01 Fixed Temperature Heat Detectors, or 7120-01 Rate of Rise Heat Detectors and an indefinite number of contact closure type devices which draw no current in the normal condition, (that is, the 7105-03 Fixed Temperature Heat Detector and 1102 Manual Call Points).

Alarm Sounders.

With internal battery – 2 amps (Maximum per Panel).

That is:-		
	40	Bells with 0.05 amp consumption.
or	20	Bells with 0.10 amp consumption.
or	57	2500 Warblers (0.035 amps per Warbler).
or	3	2403 Mini-Sirens. (0.42 amps per Siren)

b) With external battery – 10 amps. (Maximum per Panel).

That is:-		
	200	Bells with 0.05 amp consumption.
or	100	Bells with 0.10 amp consumption.
or	285	2500 Warblers (0.035 amps per Warbler).
or	15	2403 Mini-Sirens. (0.42 amps per siren).

Notes.

1. When considering the number of alarm sounders to be fitted as detailed above care should be taken to ensure that the voltage drop per alarm circuit does not exceed 4 volts.

2. Any additional equipment, for example polarised 1396 Relays and polarised 207 Lamp Units, connected to the alarm circuit will reduce the maximum of peripherals stated above.

3. The Indicator is supplied with 11 monitored alarm circuits. That is, 1 master and 10 sector alarm circuits. Maximum output per circuit is:-

a) Master Alarm – 1 amp @ 24V d.c.

b) Sector Alarm – 2 amps @ 24V d.c.

4. Each sector alarm circuit may be interlinked to provide either

a) Grouped sector alarm ringing
b) One additional master alarm circuit.

5. For alarm loads above 2 amps, when sector alarms are interlinked to provide the additional master alarm circuit, then the load must be distributed between sector alarms with a maximum of 2 amps per sector alarm.

6. An End-of-Line Resistor Code 9122-03 is required at the end of each alarm sounder circuit and one code 9122-02 end of line resistor at the end of each trigger device circuit.

7. For alarm loads in excess of 10 amps – for example, a load of 6 Model 1500 Sirens – then an external Load Relay and a separate power supply (unmonitored) will be required.

Specification.

i) 3215-01 – Main Indicator Panel.
Size – 342mm H x 448mm W x 190mm D
Weight – 9.3kg
Finish/Material – Case-textured goose grey – mild steel. Front panel – lightly textured matt black, screen printed white – flame retardant structural foam plastic.

NOTE: This unit is supplied complete with necessary screws for fitting to terminal box.

ii) 3215-11 – Terminal Back Box.
Size – 222mm H x 427mm W x 47mm D
Weight – 1.7kg
Finish/material – Case textured goose grey – mild steel.

NOTE: This unit is supplied complete with 1 – master terminal P.C.B. assembly and 1 set of installation instructions.

iii) 3215-21 – Zone Output Terminal Block.
Size – 63mm H x 41.5mm W x 34mm D
Weight – 50gm
Material – Fibre glass P.C. Board + terminals and ribbon cable.

iv) 3215-31 – Zone Alarm Board.
Size – 102mm H x 156mm L x 32mm W
Weight – 92gm
Material – Fibre glass P.C. Board + components.

v) 3215-41 – Battery Sets.
Size – 2 off, each 81mm H x 138mm L x 93mm W
Weight – 2 off, each 2.4kg.
Type – Each set comprises 2 x 12V 5 ampere hour Chloride Cyclon sealed lead acid batteries. NOTE: Two sets required per panel to give 10 ampere hour capacity when connected in parallel.

vi) 3215-51 – Designation Panel.
Size – 342mm H x 258mm W x 96mm D
Weight – 2.46kg
Finish/Material – Case textured goose grey – mild steel. Front plate – lightly textured matt black, screen printed white – injection moulded plastic.

NOTE: This unit is supplied complete with
a) Log Book.
b) Installation Notes.
c) Maintenance Manual.
d) Spare Fuses.
e) Spare Fire Alarm Contact Glasses.

vii) 3215-61 – Flush box/cable termination box.
Size – 187mm H x 418mm W x 41mm D
Weight – 1.7kg
Finish/material – Case-textured goose grey – mild steel.

NOTE: This unit is supplied complete with 4 fixing bolts to secure the flush box to the Code 3215-11 Terminal Box.
No terminals are provided in this box. Any additional interconnecting terminals must be supplied by the installer if needed to suit external wiring. (See Note 3 under Ordering Information overleaf).

Ordering Information

The design of the panel enables installation to take place in two stages.

Stage 1 (First Fix) consists of the terminal box and accessories.

Stage 2 (Second Fix) is the main panel.
For example, a 6 zone Model 3215 Indicator panel for installation by a contractor with flush wiring would comprise:-

1. First Fix Items.

a) 1 – Model 3215-61 Flush wiring/cable termination box.

b) 1 – Model 3215-11 Terminal Back Box.

c) **6** – Model 3215-21 Zone Output Terminal Blocks.

2. Second Fix Items.

a) 1 – Model 3215-01 Panel.

b) 1 – Model 3215-51 Designation Panel.

c) 2 – Model 3215-41 Battery Sets.

d) **6** – Model 3215-31 Zone Alarm Boards.

Notes.

1. For indicator panels required similar to the example simply change the number (as indicated in bold type) of Model 3215-21 Zone Output Terminal Blocks and the number of 3215-31 Zone Alarm Boards ordered to correspond with the number of zones required.

2. If surface wiring is used to install the indicator panel delete the Model 3215-61 flush wiring box, if not required as a cable termination box – see note 3.

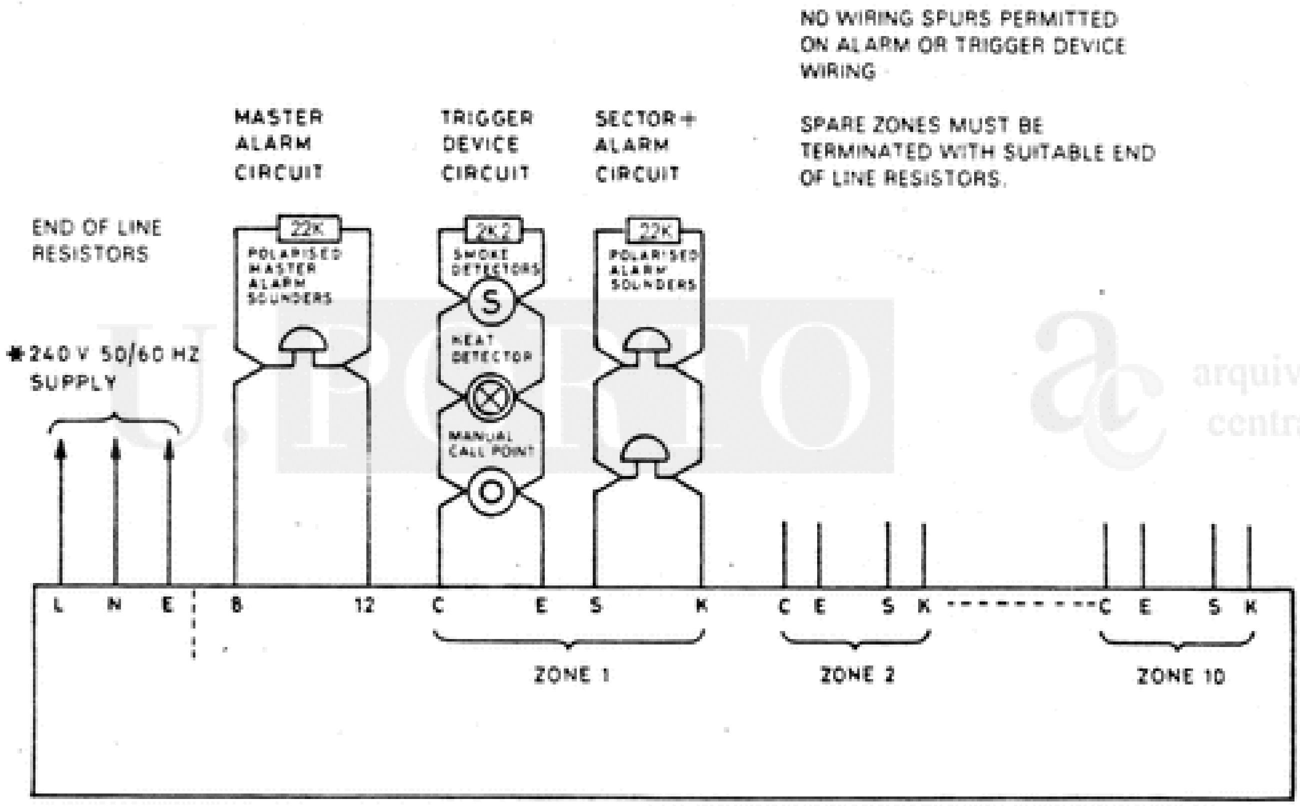
3. If external wiring exceeds 1.5mm² type the Model 3215-61 flush wiring/cable termination box will still be required. The larger cables should be terminated (terminals not supplied) in this box and 1mm² cable or similar should be used to wire from these terminations to the indicator panel terminals.

4. If an external battery and battery charger for the d.c. supply is to be fitted

a) [illegible] Model 3215-41 Battery Sets

b) Order necessary external Battery/Charger Equipment.

EXTERNAL WIRING DIAGRAM



3215-01 10 ZONE INDICATOR PANEL

* 127V 50/60Hz Supply available on request.
+ The number of sector alarm circuits wired depends upon:-
(a) The most economical wiring for the installation, if connected as the 2nd Master Alarm Circuit.
(b) Grouping of sectors if Sector Alarm ringing required.

Note
For interlinking of terminals and external wiring of the clean S.P. c/o contacts see installation notes supplied with each terminal box.

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CHLORIDE GENT

3225 Single Zone Fire Alarm Control Panel. Publication 1042

The Chloride Gent 3225-01 Single Zone Fire Alarm Control Panel has been developed to provide a high quality, attractive yet reliable unit which is simple to install and operate.
The unit is surface mounted and provides a completely self contained Fire Alarm Control Unit incorporating Fire Signal, Fault Signal, Supply on Signal, Internal Buzzer, Internal Batteries, Reset Push and Control Key Switch.
Operating instructions are featured on the front of the panel and a log book and installation notes are provided with each unit. A comprehensive circuit drawing is printed on the inside of the front panel.

Standards
The panel is designed to comply with BS 3116 Part 4 - Automatic Fire Alarm Systems in Buildings, and is intended to be part of systems that are installed to BS 5839.

- Designed to comply with BS 3116 Part 4.
- All zone and sounder circuits monitored.
- Suitable for use with a wide range of trigger devices and sounders*
- Self contained - incorporates
  - Fire Alarm Control Circuit
  - Fire Signal
  - Fault Signal
  - Batteries
  - Buzzer
  - Reset Push
  - Control Key Switch
- High Quality Specification - simple to install and operate.
- Mains/battery operation with automatic changeover.
- Spare fused voltage free contact (not monitored).

*NB. When trigger devices and sounders not of Chloride Gent manufacture are used advice from our technical department should always be sought.

Specification

Maximum Ratings

Mains voltage	110 volts + 15%. 50-60Hz 240 volts + 10%. 50-60Hz
Detector circuits	26V output, 20 detectors.
Sounder circuits	1 amp 30 volts d.c. per contact. 1 amp total output current, master & sector.

Detector Circuit
a) End of Line Resistor = 2K2 ohm. Drain current 10 milli-amps for monitoring circuit.
b) Maximum detector load - 2 milli-amps. The detector load may be any mixture of 7201, 7220, 7105-01, 7120 or 3042 detectors to a maximum of 20 units. In addition any number of manual call points, 77 or 7105-03 heat detectors may be added providing the cable resistance limit is not exceeded.
c) Cable - Maximum cable loop resistance = 150 ohms.
Maximum capacitance between cores = 2 microfarad.
Minimum leakage resistance core to core both ends open circuit = 1M ohm.
d) Terminal Voltage
At 25°C
i) Standby condition (mains on), minimum 20.5, typical 22, maximum 26.
ii) On battery discharge (mains failed), minimum 16.5, maximum 21.

Sounder Circuits
a) End of line resistor for monitoring circuit = 2K2 ohms. Drain current = 2 milli-amps.
b) Load - The load must comprise 24 volts d.c. (series diode) polarised sounders.
eg Code 2102-52 Bells
Code 2109-52 Bells
Code 2110-52 Bells
Code 2114-52 Bells
Code 2115-52 Bells
Code 2116-52 Bells
Code 2403-52 Sirens
} See publications 2010, 2011, 2012 and 2015
Maximum load that can be supplied by the panel = 1 amp.
i.e. 20 bells with current consumption of 0.05 amps each.
c) Cable - Maximum cable loop resistance for correct operation of monitoring circuit = 100 ohms.
THE CABLING MUST IN PRACTICE BE OF A SUFFICIENT LOW RESISTANCE TO PASS FULL SOUNDER LOAD, AND DELIVER A RATED VOLTAGE TO THE FURTHEST SOUNDERS. IF IN DOUBT SEEK ADVICE.

End of Line Resistors
Code 9122-02 end of line resistors required for detector circuit and both sounder circuits – total 3 off.

Repeat Output
Fire 12 volts via a 1K ohm resistor.
Normal Healthy 0 volts via a 1K ohm resistor.

Battery Supply
Battery type Chloride-Cyclon sealed lead acid. Code 3215-41.
Battery capacity 5 Ah.

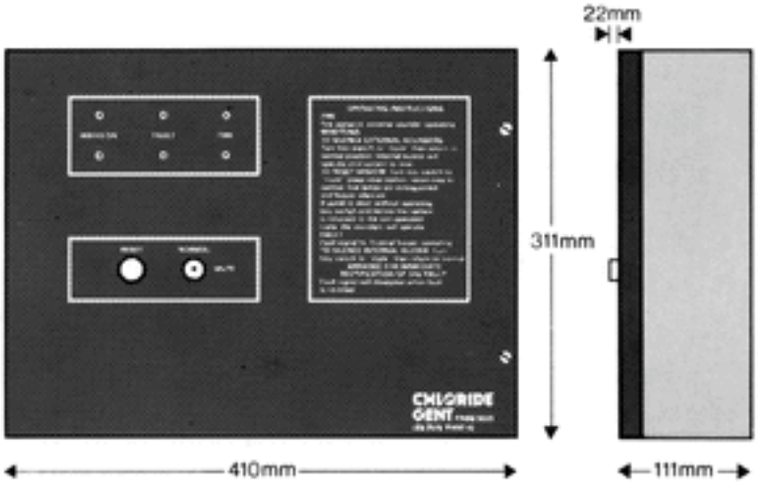
Discharge Duration at 25°C.
a) Normal standby - no alarm present - approximately 90 hrs.
b) To allow for sounder load for 1 hour after the end of the standby period = 72 hours + 1 amp sounder load for a further hour.

Recharge Duration - 24 hours at 25°C.
Battery recharge time will be greatly extended at low temperatures.

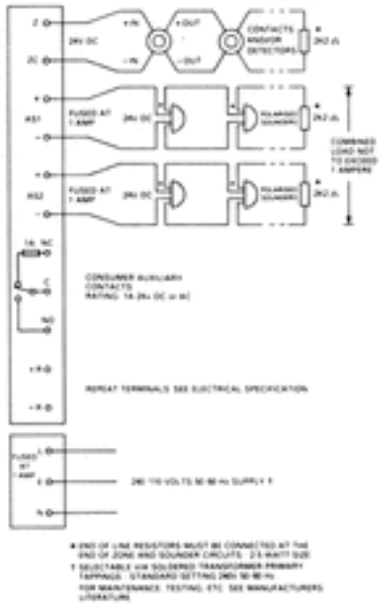
End of Discharge Protection
The battery is disconnected when the voltage falls below a preset value, to protect the battery from damage caused by over discharge.

Temperature Performance
Recommended temperature range for best battery life +15 to +35°C.

Auxiliary Contact
A voltage free auxiliary contact is provided. This is a single pole change-over contact that is operated when the sounders are energised.
Maximum rating - 1 amp 30 volts a.c. or d.c.
Fuse rating - 1 amp.
For use in controlling (from separate power supply) additional facilities, eg,
Door closers
Manned centre link
Repeat Lamp units.



MODEL 3225-01 SINGLE ZONE PANEL
'SPURS' OR 'TEES' MUST NOT BE USED



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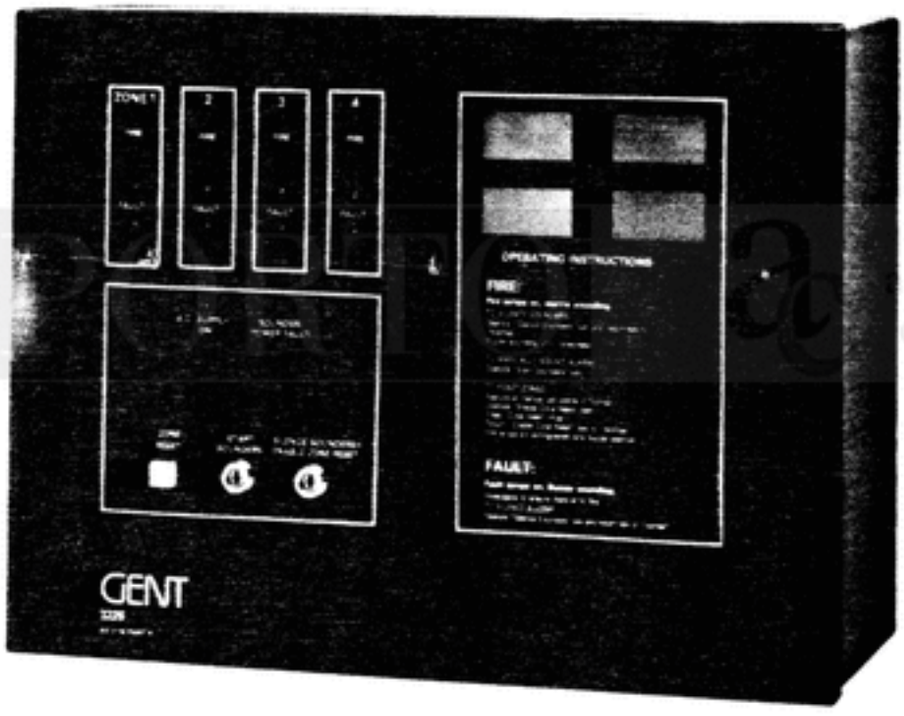
630-88

GENT

CI/SfB (68)

UDC 654.924

3226 Two to Four Zone Fire Alarm Control Panel Publication 1048



The Gent 3226 Fire Alarm Control Panel has been developed to provide a high quality, attractive and reliable unit which is simple to install and operate and caters for systems up to 4 zones.

The unit can be surface or flush mounted and provides a completely self-contained Fire Alarm Control Unit incorporating 4 Fire Signals, Fault Signal, Supply on Signal, Internal Buzzer, Internal Batteries and Charger, Reset Push, Start Sounders Key Switch, Control Enable Key Switch, Zone Designation is also featured on the front of the panel.

Standards

The panel is designed to comply with BS3116 Part 4 – (Automatic Fire Alarm Systems in Buildings) and can be used in systems installed to BS5839 Part 1 1980 (Fire detection and Alarm Systems in Buildings), Code of Practice for installation and servicing.

- Designed to comply with BS3116 Part 4
- All zone and sounder circuits monitored
- Suitable for use with a wide range of trigger devices and sounders*
- Self contained – incorporates
  - Fire Alarm Control Circuits
  - 4 Fire Zones
  - 5 Fault Signals
  - Batteries and charger
  - Fault Buzzer
  - Reset Push
  - Control Enable Key Switch
  - Start Sounders Key Switch
- High Quality Specification
- Simple to install and operate
- Mains/battery operation with automatic changeover
- Extra voltage free changeover contact for other ancillary equipment

Specification

Maximum Ratings

Mains Voltage 240 volts ±10% 50-60Hz

Detector Circuits 26V output, 20 detectors

Sounder Circuits 1 amp 24 volt D.C. nominal per contact
1 amp total output current, master and sector

Detector Circuits

A maximum of 20 smoke detectors may be used. These may be any mixture of 7201-31 and 7220-31 detectors. In addition any number of manual call points and/or 7105-31, 7105-03, 7103-03, 7120-31 heat detectors may be added, provided the maximum Cable loop resistance of 150 ohms is not exceeded.

Sounder Circuits

A facility is provided in the panel to allow for 2 separate sounder circuits.

The panel is capable of supplying a max. load of 1 amp.

Any of the wide range of Gent sounders (24V D.C. polarised) can be used provided that the total load of both sounder circuits does not exceed 1 amp.

i.e. 20 bells with a current consumption of 0.05 amps each.

To ensure the correct operation of the monitoring circuit, wiring should be used with a max cable loop resistance of 100 ohms.

End of Line Resistors

Both sounder circuits and the detector circuits must be terminated using Gent 9122-02 end of line resistors.

Repeat Outputs

Repeat outputs for Fire and Fault indication are provided.

Repeat common connection is + 26 volts.

Batteries

Two sealed lead acid batteries providing nominal 24V 6Ah capacity are supplied with each panel.

A standby period of 40 hrs is provided in the event of a mains failure, after which the batteries are still capable of operating the alarm sounders for a period of 1 hour. After the panel has been reset there still remains sufficient capacity to provide an immediate 1 amp sounder load for a further 30 mins.

The batteries have a recharge period of approximately 24 hrs. depending on the ambient temperature.

To protect the batteries from damage caused by over discharge the batteries are automatically disconnected when the voltage fall below a preset value.

Recommended temperature range for best battery life + 15°C to + 35°C.

NB. When trigger devices and sounders not of Gent manufacture are used, advice from our technical department should always be sought.

Operating instructions are featured on the front of the panel and a log book and installation notes are provided with each unit. A comprehensive circuit drawing is printed on the inside cover of the installation notes.

3227-04 Repeat Indicator Panel

Repeat facilities can be provided by this Panel, which has been designed to complement the 3226 indicator in appearance.

The unit can be surface or flush mounted and provides for up to 4 separate fire alarm repeat zones (with the facility for each zone to be clearly marked). Faults are indicated by lamps (LED's) and buzzer and the panel is provided with a cancel fault buzzer switch.

The unit is finished in matt black and goose grey and is supplied complete with separate instructions.

Dimensions - 231mm L x 155mm H x 46mm D.

Each 3226 panel is capable of powering one or two repeat units.

Auxiliary Contact

A voltage free auxiliary contact is provided. This is a single pole changeover contact that is operated when the sounders are energised.

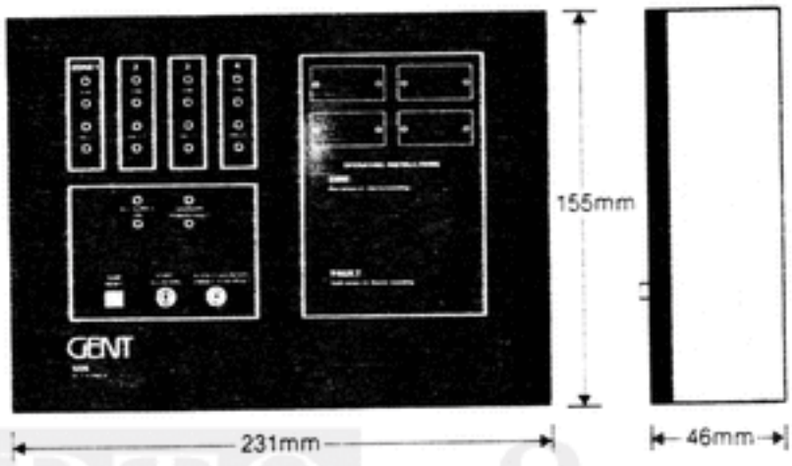
Maximum rating – 1 amp 30 volts A.C. or D.C.

For use in controlling (from separate power supply) additional facilities, e.g.

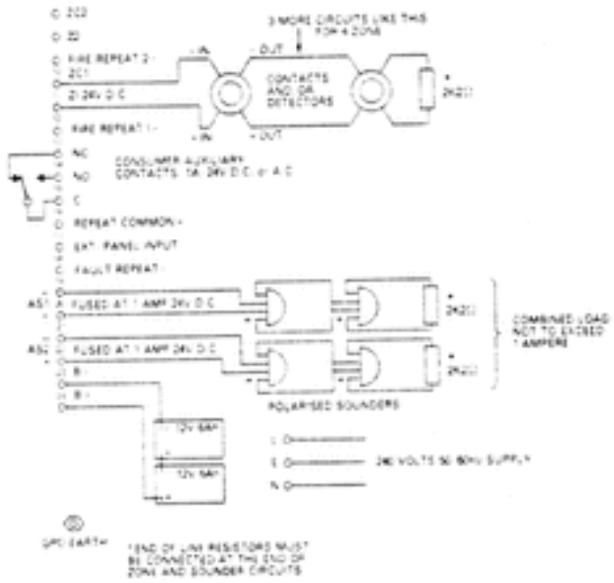
Door Closers
Manned Centre Link
Repeat Lamp Unit.

Information required on order

1. Quantity
2. Model number



MODEL 3226 FIRE ALARM PANEL
'SPURS' OR 'TEES' MUST NOT BE USED



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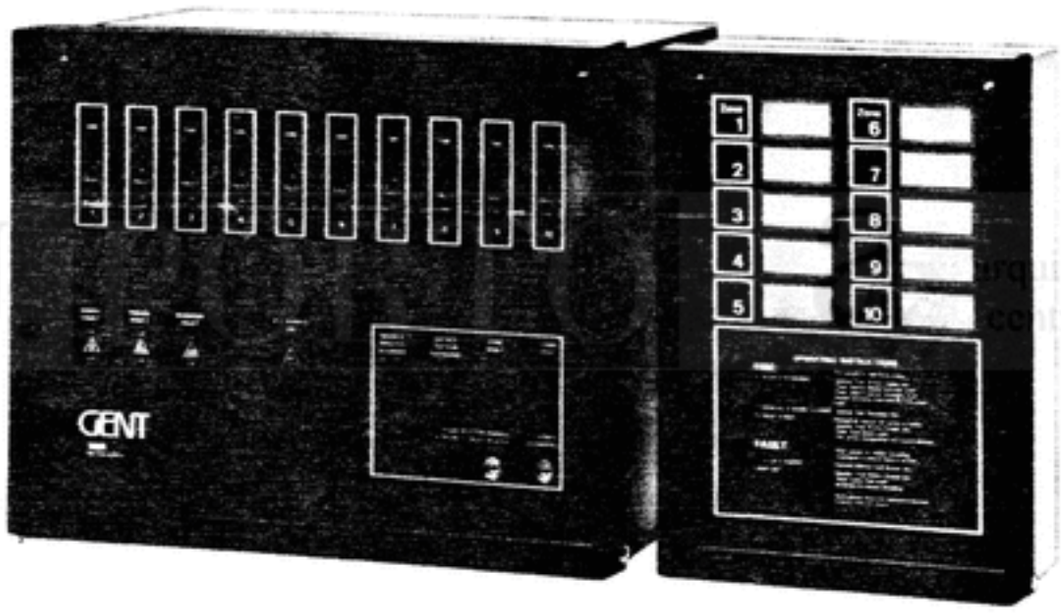
GENT

CI/SfB (68)

UDC 654.924

630-84

3250 Multi Zone Control Indicator Publication 1050



The Gent 3250 Multi Zone Indicator Panel combines the latest electronic advances with the company's wide experience as a leader in the fire alarm and detection industry.

The 3250 functions are microprocessor controlled and the unit is available in both 5 zone and 10 zone versions.

- By using a pre-programmed microcomputer a wide range of facilities can be selected within the panel during commissioning. This allows modes of operation to be chosen to meet the individual requirements of various locations such as offices, hospitals, industrial and commercial premises. Also these features provide the opportunity to significantly reduce the incidence of false alarms.

Main Features	Benefits
Microprocessor based	– Greater reliability
Discriminates between manual and automatic signals	– Reduces false alarms
Manned Centre Link signal confirmation period	– Reduces false alarms
Fault diagnosis facility	– Wide range of system faults clearly displayed
Separate zone isolation	– Ease of servicing and maintenance
Reduced power consumption	– Longer standby operation
2 wire connection to Repeat Indicator	– Reduces Installation Costs

The unit has been developed to provide a reliable, attractive, high quality panel both simple to install and easy to operate. Special considerations have been given to the installation contractor, commissioning and maintenance engineers and to the ultimate user.

The use of a microcomputer enables the panel to provide a whole range of fault diagnosis, discriminate between manual call point and automatic signals and provide a 'first up' signalling facility giving clear identification of a fire condition spreading from an original to subsequent zones.

The panel can be surface or flush mounted and provides a completely self contained fire alarm control unit incorporating fire signals, fault signals, power supply signals, internal buzzer, internal battery and charger, reset buttons and key operated Push Button Enable, Silence Fault Buzzer switch and Start Sounders switch.

An extensive range of two wire trigger devices can be used, including ionisation or optical smoke detectors, fixed temperature or rate of rise heat detectors or manual call points. The alarm sounder circuits will handle bells, sirens, warblers, electronic sounders.

Operating instructions are featured on the front of a separate zone designation panel which contains log book installation notes, maintenance manual, spare fuses and spare glasses.

Standards

The Gent 3250 control panel has been designed to comply with the following standards:-

1. BS 5116 Part 4
2. Health and Safety at Work Act
3. F.O.C. requirements
4. And can be used in systems installed to BS5839 Part 1 1980.

Operation

Two conductors are required for each zone or area of the premises to be protected, for the trigger circuits, and two conductors for each alarm sounder circuit – no wiring spurs or tees are permitted.

Each initiating zone circuit is terminated by an end of line capacitor unit and each alarm sounder circuit by an end of line resistor unit. The use of capacitors for monitoring detector lines reduces electrical interference as well as current consumption.

When a trigger device operates, the appropriate 'Fire' lamps are illuminated and the panel operates the alarm sounders. Should a fire condition spread from one zone to others, such as in large open space warehouses, the panel will indicate all zones under fire condition but show the original zone indication as a flashing signal ('first up' indication).

Master alarm sounders are silenced by operating the Push Button Enable Key Switch, followed by the Silence Master Sounder push button. Sector sounders can then be silenced by operating the Silence Sector Sounders push button.

After the above sequence has been carried out it steadies the 'first up' fire indication and brings into operation the indicator's internal supervisory buzzer (pulsing).

When the emergency has been dealt with and the trigger device returned to normal (non operated state) then the zone can be reset. To reset the zone, the Push Button Enable Key Switch is operated followed by the Zone Reset Push. If a fire condition is still detected in a zone or zones where a fire condition had previously been recorded, the appropriate lamps are re-illuminated and the supervisory buzzer re-sounded.

EXTERNAL SOUNDER OPERATIONS

Sector Linking – a facility is provided for each sector or alarm zone to be linked to any combination of other sectors such that a fire in a given zone may produce ringing in several other sectors. A separate terminal block is provided in the panel for this purpose.

Alert Ringing – This provides continuous ringing in the sector or sectors where a fire condition has been confirmed and an alert (pulsed) condition in all other sectors.

Delayed Evacuate – In this mode the panel produces continuous ringing in the sectors associated with any confirmed fire condition and after a preset delay (0 – 12 minutes) sounds the full evacuate condition in all sectors.

Start Sounders – A key operated switch is provided to enable all alarm sounders in all sectors, plus the master alarm, to give the evacuate signal regardless of any other fire panel condition.

Master Sounder – Separate terminals are provided for a master sounder which can be fitted adjacent to the indicator panel. This operates continuously irrespective of the sounder mode employed.

Additional Standard Features

1. Lamp test push button – to test all the LED's on the panel.
2. Clean double pole change over contacts – one normally open, one normally closed to operate a Manned Centre Link and auxiliary outputs for automatic door closers, or other ancillary equipment.
3. Manned Centre Link Delay Optional facility to provide a delay period between the operation of an automatic detector and the signal passed to a Manned Centre, during which time verification can be carried out.
4. 19in Rack Mounting – the unit can also be mounted in standard 19in racks, by using a modification kit.
5. Commissioning and Maintenance Mode – one zone can be isolated for tests to be carried out on its detectors and sounders. All other zones operate normally.

3250 FAULT DIAGNOSIS

FAULT MCL AND BUZZER ALWAYS ACTIVATED					
FAULT TYPE	AMBER ZONE LED	BUZZER	SOUNDER FAULT LED	POWER FAULT LED	A.C. SUPPLY LED
SECTOR O/CIRCUIT S/CIRCUIT	STEADY FLASHING	STEADY STEADY	STEADY STEADY	–	–
ZONE O/CIRCUIT S/CIRCUIT	STEADY FLASHING	STEADY STEADY	–	–	–
MAINS FAILURE	–	PULSED	–	FLASHING	OFF
CHARGER FAILURE	–	PULSED	–	FLASHING	ON
BATTERY DIS-CONNECTED	–	STEADY	–	STEADY	ON
LOW BATTERY CAPACITY	–	STEADY	–	FLASHING	ON

Earth faults are indicated by the separate Earth Fault LED and the Fault Buzzer.

6. Auto/Manual Mode – terminals are provided to enable the system to be switched to manual operation only. For situations where automatic detection would prove impractical during daytime (due to industrial processes, welding etc) but would become a requirement when the premises were unoccupied.

Fault Indication

Fault indication is given for the following:-

a) Open or short circuit on trigger device wiring.
b) Open or short circuit on *all* alarm sounder wiring.
c) Mains failure.
d) Battery disconnection.
e) Battery charger failure.
f) Low battery capacity.
g) Fuse failure.
h) Earth fault.

Faults are indicated by a combination of lamps and internal buzzers shown in the table below:-

Battery Capacity

The battery capacity is 12 ampere hours. To maintain reliable circuit operation an automatic low voltage battery cut-off feature is fitted.

Quiescent Load

The 3250 panel quiescent current under mains failure conditions is 90mA (independent of the number of zones and sectors).

TOTAL SYSTEM QUIESCENT = 90mA
+ DET CURRENT mA
+ ANY EXTRAS mA

The following graph gives relationships between total system quiescent current and standby period for various ambient temperatures. To derive total standby period, calculate total quiescent current of system (as above) and read off standby period at appropriate ambient temp.

Alarm Load

The above values allow sufficient capacity at the end of the standby period to provide an alarm load of 2 amps for a period of 30 mins.

Associated Equipment

3250 is suitable for operating with the following Gent units:-

a) Trigger Devices

1. 7201-31 Ionisation Smoke Detectors see Pub. No. 1032.
2. 7220-31 Optical Smoke Detectors see Pub. No. 1044.
3. 7105-31 Heat Detectors – Fixed Temperature see Pub. No. 1039.
4. 7120-31 Heat Detectors – Rate of Rise see Pub. No. 1041.
5. 1150 Manual Call Point see Pub. No. 1010.

b) Sounders

1. 505 Bells see Pub. No. 2011.
2. 6208 Bells see Pub. No. 2023
3. 2510 Electronic programmable sounders see Pub. No. 2022
4. 2403 Mini-Siren (Polarised) see Pub. No. 2015

c) Ancillary Equipment

1. 3251 Repeat Indicator Unit.
2. End of Line capacitors must be used to allow monitoring of each detector circuit.
3. 9122-03 22K End of Line Resistors must be used to allow monitoring of each sounder circuit.
4. 1396 (Polarised Relay) for external switching.
5. Manned Centre Link facilities.
6. 2300 Xenon Warning Beacons.
7. 207 luminous alarm signal (Polarised).

Maximum number of Trigger devices

Each zone may have up to 3mA of detector load. This represents approximately 30 of any mixture of smoke detectors listed together with any number of contact closure type devices which draw no current in the normal condition, that is the Gent 7105-31, 7120-31 Heat Detectors and 1150 type Manual Call Points.

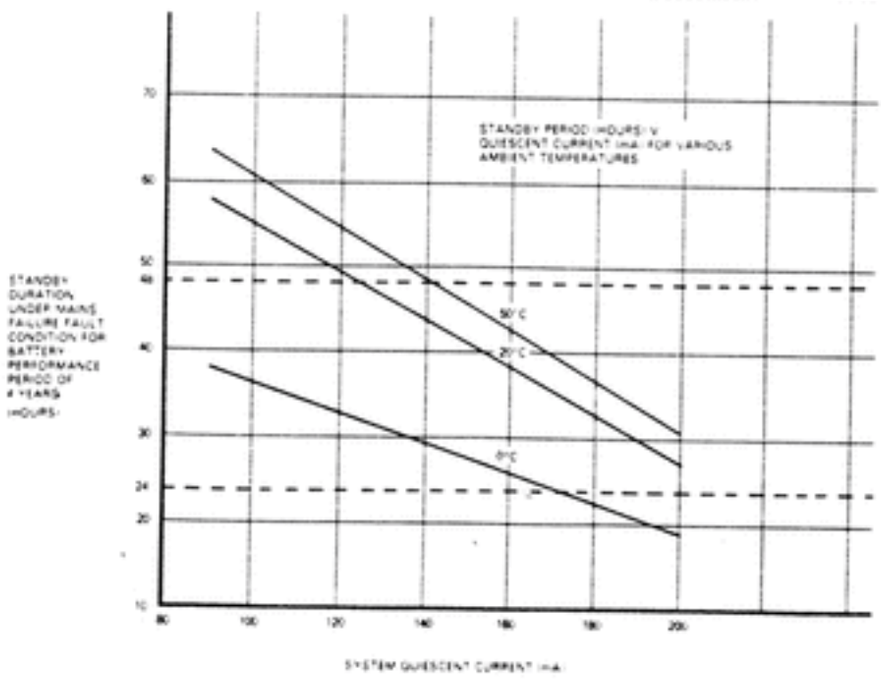
Alarm Sounders

With internal battery 2 amps (Maximum per Panel).

40 Bells each with 0.05 amps consumption
or 20 Bells each with 0.10 amps consumption
or 60 2510 Warblers each with 0.03 amps consumption
or 3 2403 Mini Sirens each with 0.42 amps consumption

When considering the number of alarm sounders to be fitted as detailed above care should be taken to ensure that the voltage drop per alarm circuit does not exceed 4 volts.

Any additional equipment, for example, 1396 Relays (polarised) 207 lamp units (polarised), 2300 Xenon Warning Beacons will reduce the maximum number of peripherals stated above.



3251 REPEAT PANEL

The 3251 Repeat is designed specifically for connection to the 3250 Fire Panel. It repeats all 3250 front panel LED signals together with the Fault Buzzer, the interconnection being made with only 2 wires thereby dramatically reducing cabling costs.

The 3251 has its own monitored internal mains driven supply together with battery back up and charger. Facilities are also provided to test all the LED's on the 3251 ("lamptest") and also to cancel the Fault Buzzer independently of the main panel.

Specification

For ease of installation and connection of wiring the panel is supplied in two stages. First fix – terminal back box – to allow all wiring and building construction to be completed. Second fix – main indicator panel and all associated equipment – thereby preventing damage to sensitive electronic circuitry during building installation.

1. 3250 – Main Indicator Panel
   Size 342mm H x 448mm W x 190mm D
   Weight 8Kg (10 zones)
   Finish/Material – Case textured goose grey – mild steel Front Panel – lightly textured – matt black, screen printed white – flame retardant, structural foam plastic.

The unit is supplied complete with necessary screws for fitting to Terminal Back Box.

2. 3250 Terminal Back Box.
   Size – 22mm H x 427mm W x 47mm D
   Weight 16Kg (10 zones)
   Finish/Material – Case textured goose grey – mild steel.

3. 3250 Input/Output Printed Circuit Boards.
   Size – LH Relay 150mm L x 260mm W x 30mm H. RH Relay 150mm L x 115mm W x 30mm H.
   Weight – LH Relay 400g, RH Relay 200g.
   Each board accommodates up to a maximum of 5 zones, is supplied as a second fix item and is located on the Terminal Back Box.

4. 9200 Battery Sets
   Size 94mm H x 150mm L x 64mm W
   Weight – 2 off each 2.5kg
   Each set comprises 2 x 12V, 6 ampere hour sealed lead acid batteries. Two sets required per panel to give 12 ampere hour capacity when connected in parallel.

5. 3250 – Zone Designation Panel.
   Size 342mm H x 258mm W x 96mm D
   Weight 2.46kg
   Finish/material – Case – textured goose grey – mild steel Front plate – lightly textured matt black, screen printed white – injection moulded.

The unit is supplied complete with:-

a) Log Book
b) Installation Notes
c) Maintenance Manual
d) Spare Fuses
e) Spare Mannual Call Point Glasses

Optional Equipment

Flush Box/Cable Termination box.
Size – 187mm H x 418mm W x 41mm D
Weight – 1.7kg
Finish/Material – Case textured goose grey – mild steel.

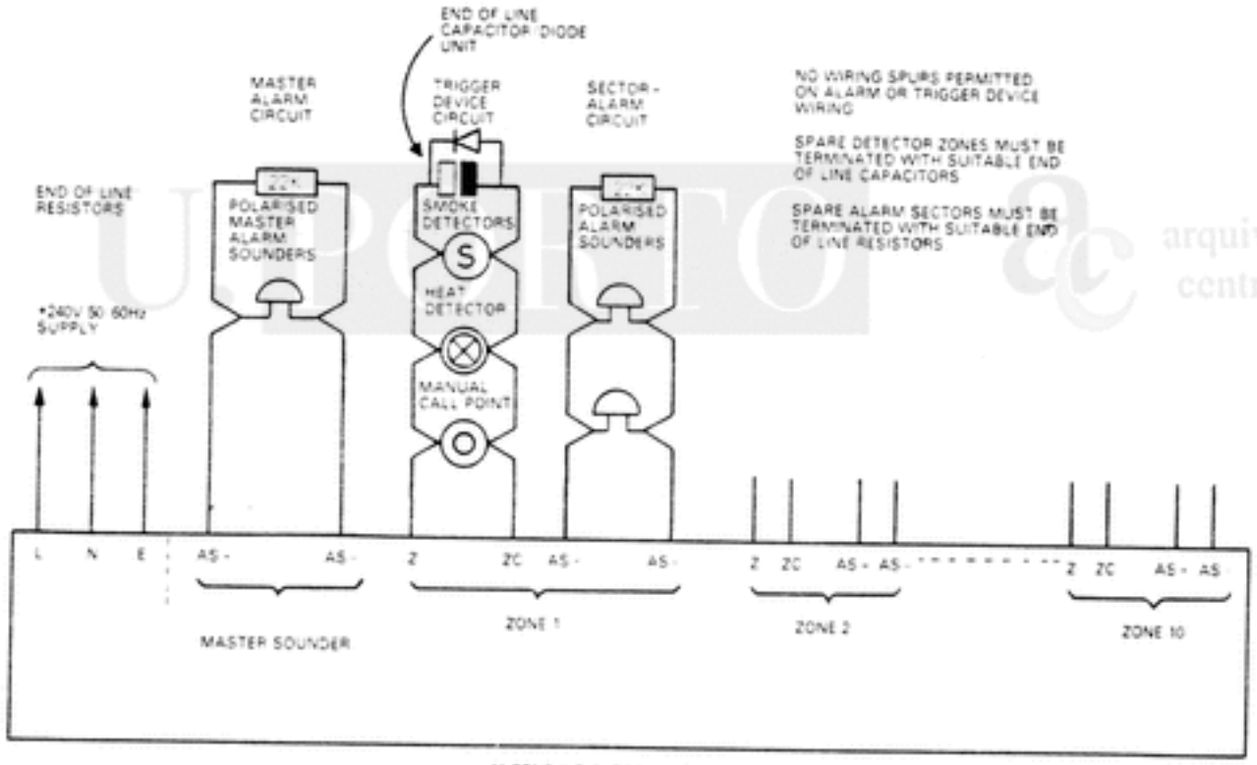
The unit is supplied complete with 4 fixing bolts to secure the Flush Box to the Terminal Back Box.

No terminals are provided in this box. Any additional interconnecting terminals must be supplied by the installer if needed, to suit external wiring.

Ordering Information

Quantity
5 zone or 10 zone capacity
Optional Equipment.

EXTERNAL WIRING DIAGRAM



*127V 50 60Hz Supply available on request
- The number of sector alarm circuits wired depends upon
(a) The most economical wiring for the installation. If connected as the 2nd Master Alarm Circuit
(b) Grouping of sectors if Sector Alarm ringing required.

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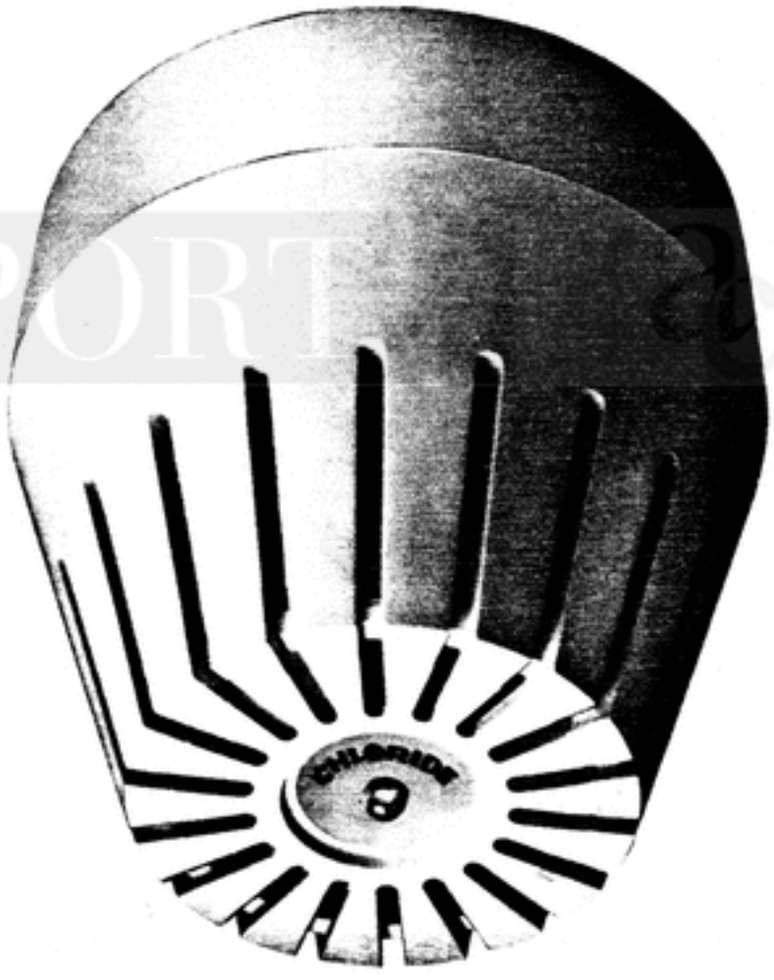
CHLORIDE GENT

7201-01 Ionisation Chamber Smoke Detector Publication 1032



The Chloride Gent 7201-01 smoke detector has been developed around a completely new concept of reference chamber, and is designed to meet the requirements of BS 5446 Pt 1-1977, Components of Automatic Fire Alarm Systems for Residential purposes.

The unit plugs in to a Chloride Gent 7912-01 detector base, which when used in conjunction with a range of adaptor boxes, provides installation flexibility with maximum versatility.

Particular emphasis has been given to the overall design of the 7201-01 detector in order to minimise the incidence of false alarms from electrical or other sources.

Visual indication of an alarm is given by a light emitting diode, clearly visible on the detector grill.

Operation

Under normal conditions ionised molecules flow freely across the ionisation chamber from the low energy radiation source to the detection electrodes, thus causing a small current to flow within the ionisation chamber. Ionised smoke particles, even those not visible, move across the chamber at a lower speed thus reducing the current in the chamber. When the current has dropped to a predetermined level the alarm circuit is triggered.

Installation

The detector is fitted to the base by a simple 'plug in and twist' locking action. Adaptor boxes with integral detector bases are available when the detector is to be used on other than two wire circuits.

Mounting Base

7912-01
For two wire circuits using surface or concealed wiring methods. Fixing holes are provided for mounting to standard conduit boxes.

Adaptor Boxes

7913-01
Mains powered surface mounting box supply voltage 240V AC 40-60Hz containing a 'Fire Relay' (2 normally open contacts, 1 normally closed) and a 'Fault Relay' (2 normally closed contacts connected in parallel).

7913-02
As above but for flush mounting.

7913-03
Mains powered surface mounting box supply voltage 120V AC 40-60 Hz containing a 'Fire Relay' (2 normally open contacts, 1 normally closed) and a 'Fault Relay' (2 normally closed contacts connected in parallel).

7913-04
As above but for flush mounting.

7913-05
Low voltage surface mounting relay box 24V DC or 28V AC nominal with 'Fire Relay' only (2 normally open contacts, 1 normally closed).

7913-06
As above but for flush mounting.

7913-07
Low voltage surface mounting relay box 24V DC or 28V AC nominal containing a 'Fire Relay' (2 normally open contacts, 1 normally closed) and a 'Fault Relay' (2 normally closed contacts connected in parallel).

7913-08
As above but for flush mounting.

In addition to the mounting base and the above range of adaptor boxes, a special fitment 7916-01 is available to enable the detector to be used for detecting smoke in ducts.

Associated Equipment

A comprehensive range of aids for servicing, siting and testing of the detector are available: full details of which can be found in other relevant publications.

Specification

Detection methods:
Ionisation chamber with integral fine mesh insect baffle.

Radiation source:
Americium 241, 0.8 µc (complies with activity requirements of OECD directive on smoke detectors containing radio-active material).

Electrical Data:
Supply Voltage: 16V - 32 VDC
23V - 35 VAC at 40Hz to 100Hz.
Quiescent Current: 60 µa nominal.
Alarm Current: The detector can pass a maximum current of 400 mA in the 'fired' condition.
Alarm Voltage: In the 'fired' condition the voltage drop across the detector is approximately 4.2 volts.

Fire Indication: Red LED on grill.

Temperature range: 0°C to 50°C.

Connections: 5 gold plated brass contact pins to mate with gold plated beryllium copper spring contacts in code 7912-01 base.

Casing: White 'Noryl' Engineering grade plastic.

Dimensions: Without base, dia 98.5mm x height 78mm (from top of LED to bottom of contact pins).

With base dia 98.5mm x height 96mm. Height of smoke entry from back of base 60mm.

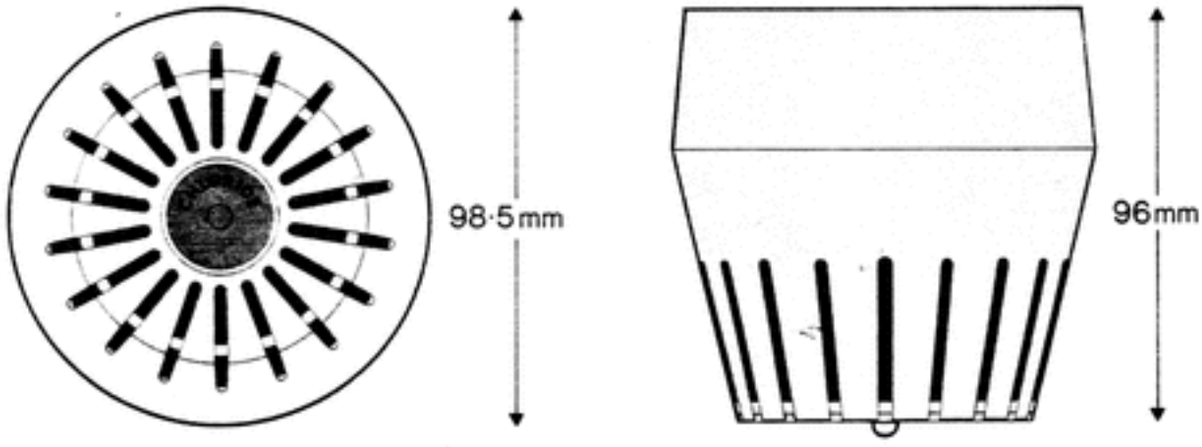
Mounting Base

7921-01
Fixing holes are provided, 51mm (2ins) to 60mm (2¾ins) centres, for mounting to a 70mm (2¾ins) square box, 51mm (2ins) BESA box.
Terminals - adequate provision is made within the 7912-01 for the termination of most normally used cables.

Information required on orders

Quantity and Code of detectors and mounting bases required. Quantity and code of adaptor boxes (which include integral detector box) if required.

Quantity and Code of associated equipment required.



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CHLORIDE GENT

7220-01 Optical Smoke Detector Publication 1044

The Chloride Gent 7220-01 Smoke Detector works on the optical principle and its purpose is to give early warning of a fire, by the detection of smoke, for the protection of life and property.

The principle used is particularly effective in the detection of slow smouldering fires, and where certain materials, for example, P.V.C., when overheated produce mainly large particles of smoke.

It is one of the family of Chloride Gent detectors and plugs into the 7912-01 base to provide easy installation and maintenance, with full interchangeability with, for example, the 7201-01 ionisation type smoke detector.

The 7220-01 smoke detector uses a custom built integrated circuit and is designed to meet the requirements of BS 5446 Part 1 as recommended by BS 5839 Part 1 1980.

630-71

Operation

The Chloride 7220-01 optical smoke detector operates on the long proven principle of smoke detection by light scatter – the Tyndall effect.

The smoke chamber of the detector is black and does not reflect light. A concentrated pulsed light beam is projected across the smoke chamber and an alarm photosensor is fitted in a special housing at an obtuse angle to the light beam. Under normal conditions no light reaches the photosensor.

When smoke enters the smoke chamber the light is scattered by reflection, from the smoke particles and affects the photosensor. The small electronic signal which results is amplified and after a verification period initiates the operation of the associated circuit.

Installation

The detector is fitted to the base by a simple plug in and twist locking action. Adaptor boxes with integral detectors bases are available when the detector is to be used on other than 2-wire circuits.

Mounting Base

7912-01

For 2-wire circuits using surface or concealed wiring methods. Fixing holes are provided for mounting to standard conduit boxes.

Specification

Operating voltage
24 volts d.c. nominal

Operating voltage range
16-32 volts d.c.

Quiescent current
100 micro amps nominal.

Alarm current
The detector can pass a maximum current of 400 milliamps in the 'Fired' condition.

Alarm voltage
In the fire condition the voltage drop across the detector is approximately 4.2 volts.

Fire Indication
Red LED on grill.

Temperature range
0°C-50°C

Connections
Five gold plated brass contact pins to mate with gold plated beryllium copper spring contacts in the 7912-01 base.

Casing
White 'Noryl' engineering grade plastic.

Dimensions
Without base diameter 98.5mm × height 108mm (from top of LED to bottom of contact pins).

With base – diameter 98.5mm × height 123mm.

Height of smoke entry from back of base – 76mm.

Weight 273gms (without base) 365 gms (with base).

Mounting Base – 7912-01

Fixing holes are provided 51mm (2") to 60mm (2⅜") centres. For mounting to a 70mm (2¾") square box, 51mm (2") BESA box.

Terminals – provisions are made within the 7912-01 for termination of most normally used cables.

Systems Design

Full technical back-up for the 7220-01 detector is provided by Chloride Gent for the systems engineering required with this product and advice on the siting and correct installation of the detectors that should be sought.

Maintenance

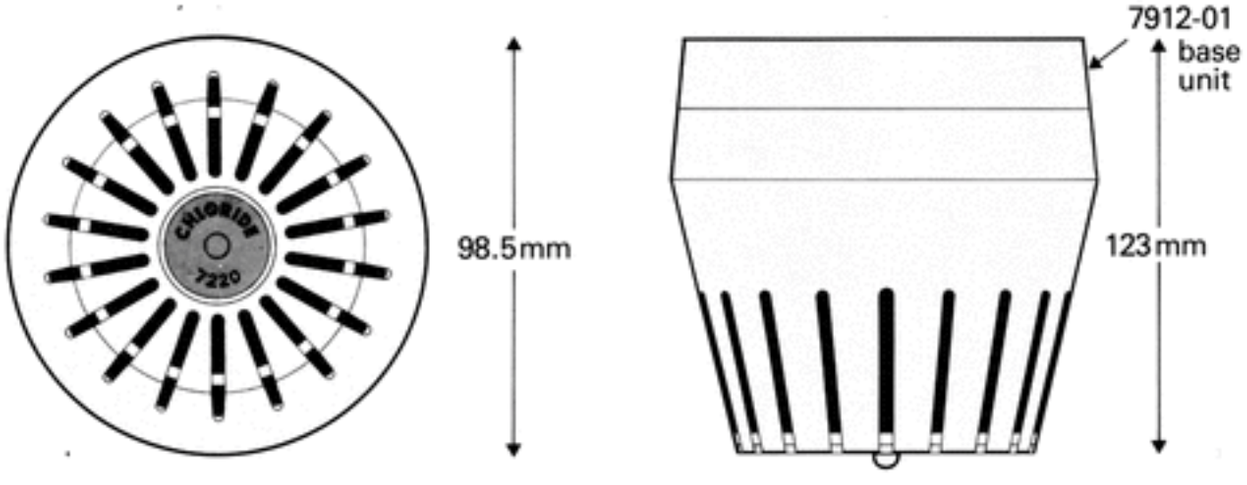
A quarterly maintenance service is available for systems using the 7220-01 detector, and full advantage of this service should be taken as recommended by BS 5839 Part 1 1980.

Commissioning

Qualified 'Fire' engineers are available to commission the system in accordance with BS 5839 Part 1 1980 clause 26.4 and a suitable certificate will be provided enabling the installer to issue the final installation and commissioning certificate.

Ordering Information

1) Quantity detectors.
2) Type of detectors.
3) Quantity of 7912-01 bases.
4) Details of site where detectors will be installed.
5) Request for commissioning visit.
6) Request for maintenance quotation.



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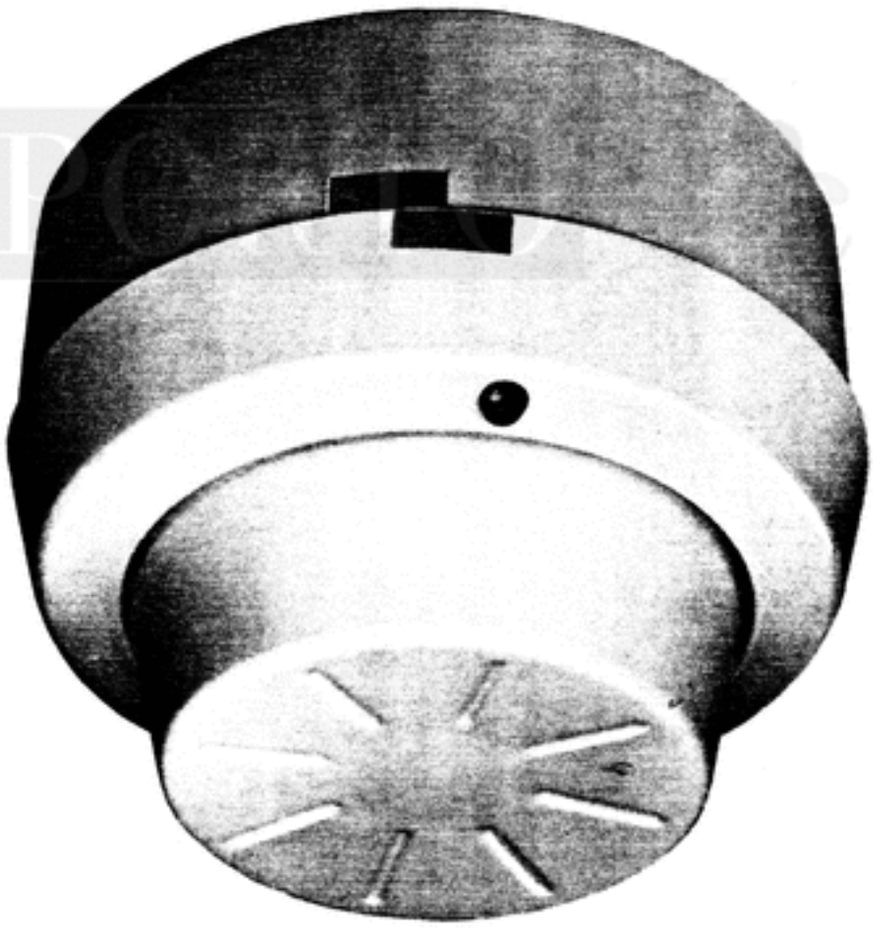
680-40

CHLORIDE GENT

7120 Rate of Rise Heat Detector Publication 1041



7120 Rate of Rise heat detectors are set to provide a high degree of protection to give the best possible results for normal fire alarm purposes, consistent with early warning and absence of false alarms.

Siting

Each detector is capable of protecting an area 6 metres (20 feet) square. The minimum number of detectors required for covering any particular area can therefore be calculated by dividing that area in square metres by 36.

Detectors should always be sited more than 500mm from walls, except where total area is less than one metre.

Detectors should normally be arranged in rows, and where possible with the rows parallel to the longest walls of the area to be protected. The rows adjacent to these walls must not be more than 3 metres (10 Feet) distant from them, and with the detectors at the ends of each row not more than 3 metres (10 feet) from their adjacent walls. The distance between rows should normally be 6 metres (20 feet) and with detectors in rows spaced at 6 metres (20 feet) intervals.

Inconveniently shaped areas may make it impossible to maintain the spacing of rows at 6 metres (20 feet) and in these circumstances it is permissible to increase the spacing between rows up to a maximum of 7.6 metres (25 feet) always providing that the distance between detectors in the rows is reduced to 4.8 metres (16 feet) to ensure that the area of 36 square metres covered by each detector is not exceeded. The 3 metres (10 feet) spacing between detectors and walls must never be exceeded.

Corridors

In corridors the maximum spacing should be 12 metres (40 feet) with the two end detectors not more than 6 metres (20 feet) from the end wall, partition or door.

Lift Wells, Stairs, etc.

At least one detector should be fixed at a position in each storey not more than 1.5 metres (5 feet) distant from each well-light, area, lift well, staircase or other flue-like opening. Additional detectors should be provided to deal with any features presenting special fire risk.

Ceiling Height

The spacing of detectors given above is suitable for normal ceiling heights of up to 6 metres (20 feet), but where ceilings are particularly high please consult us for our recommendations.

Note

It may be necessary to reduce the dimensions and areas given if the ceiling is intersected by beams measuring more than 51 cms (20 inches) in depth. The incorrect siting of detectors can be responsible for the initiation of false alarms by such causes as brilliant sun shining through glass windows, detectors being adjacent to the hot water pipes of heating systems, or unimaginative siting in kitchens, etc.

Important

Under no circumstances must any part of the detector be painted. Operational characteristics will be altered by differences in heat absorption, radiation and heat insulation.

Specification

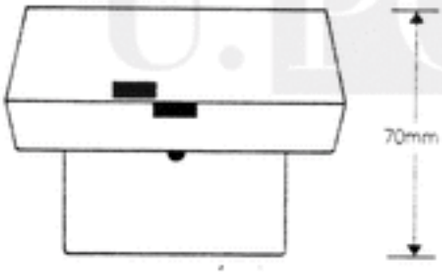
7120-01: Latching version for open circuit working
Supply Voltage: 16-32V d.c.,
23-35V a.c. at 40 to 100Hz.
Quiescent Current: <100uA
Alarm Current: The detector can pass a maximum current of 400mA in the 'fired' condition (external current limit required).
Alarm Voltage: In the 'fired' condition the voltage drop across the detector is approximately 4.2 volts.
Fire Indication: Red LED on skirt.
Connections: 5 gold plated brass contact pins to mate with gold plated beryllium spring contacts in code 7912-01 base.
Casing: White 'Noryl' Engineering grade plastic
Dimensions: Without base, dia 100mm x height 54mm (from top of detector to bottom of contact pins)
with base, dia 100mm x height 70mm
Weight: without base 200g
with base 280g

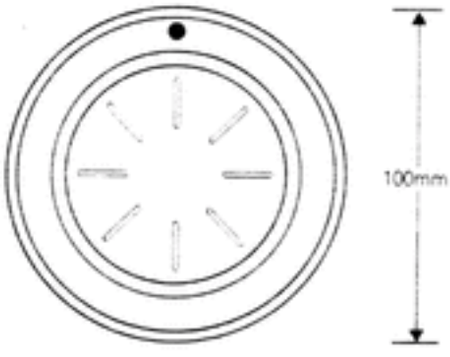
Mounting Base

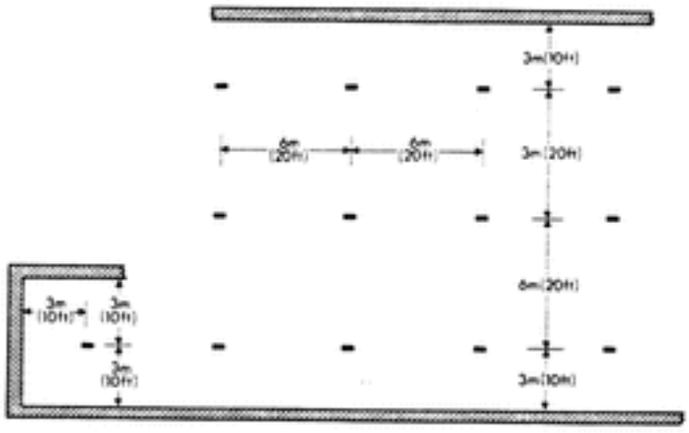
7912-01
Fixing holes are provided, 51mm (2ins) to 60 (2¾ins) centres, for mounting to 70mm (2¾ins) square box, 51mm (2ins) BESA box.
Terminals – adequate provision is made within the 7912-01 for the termination of most normally used cables.

Information required on orders

1. Quantity of detectors.
2. Code number of detectors.
3. Quantity of bases.
4. Code number of bases.
5. Voltage and type of associated control equipment.







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CHLORIDE GENT

Model 77 Heat Detector

The Model 77 Heat Detector provides an attractive yet inconspicuous means of automatically initiating a fire warning, when used in conjunction with either the Chloride Gent 75 Mark II or 85 Mark II self contained fire alarm units.

The heat detectors are set to a nominal operating temperature of 57°C (135°F) to give the best possible results for normal fire alarm purposes, consistent with early warning and absence of false alarms.

630-65

Siting

Each detector is capable of protecting an area 6 metres (20 feet) square. The minimum number of detectors required for covering any particular area can therefore be calculated by dividing that area in square metres by 36.

Detectors should always be sited more than 500mm from walls, except where total area is less than one metre.

Detectors should normally be arranged in rows, and where possible with the rows parallel to the longest walls of the area to be protected. The rows adjacent to these walls must not be more than 3 metres (10 feet) distant from them, and with the detectors at the ends of each row not more than 3 metres (10 feet) from their adjacent walls. The distance between rows should normally be 6 metres (20 feet) and with detectors in rows spaced at 6 metres (20 feet) intervals.

Inconveniently shaped areas may make it impossible to maintain the spacing of rows at 6 metres (20 feet) and in these circumstances it is permissible to increase the spacing between rows up to a maximum of 7.6 metres (25 feet) always providing that the distance between detectors in the rows is reduced to 4.8 metres (16 feet) to ensure that the area of 36 square metres covered by each detector is not exceeded. The 3 metres (10 feet) spacing between detectors and walls must never be exceeded.

Corridors

In corridors the maximum spacing should be 12 metres (40 feet) with the two end detectors not more than 6 metres (20 feet) from the end wall, partition or door.

Lift Wells, Stairs, etc.

At least one detector should be fixed at a position in each storey not more than 1.5 metres (5 feet) distant from each well-light, area, lift well, staircase or other flue-like opening. Additional detectors should be provided to deal with any features presenting special fire risk.

Ceiling Height

The spacing of detectors given above is suitable for normal ceiling heights of up to 6 metres (20 feet), but where ceilings are particularly high please consult us for our recommendations.

Note

It may be necessary to reduce the dimensions and areas given if the ceiling is intersected by beams measuring more than 51 cms (20 inches) in depth. The incorrect siting of detectors can be responsible for the initiation of false alarms by such causes as brilliant sun shining through glass windows, detectors being adjacent to the hot water pipes of heating systems, or unimaginative siting in kitchens, etc.

Associated Equipment

Model 78 latching relay must be fitted in the model 75 Mk II Fire Alarm Unit when the Model 77 Heat Detector is included in the circuit.

Heat detectors often guard property and equipment when the premises are unoccupied and in such circumstances an additional sounder may be included in the system to be heard externally.

Specification

Housing – White Noryl SE 1

Fixing – Either directly to the ceiling [51mm (2 ins) between fixing holes] or to a 2 ins BESA box.

Dimensions – 68mm (2 11/16ins) diameter x 30mm (1 13/16ins) high.

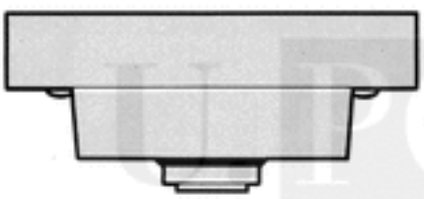
Weight – 57 gms (2 ounces)

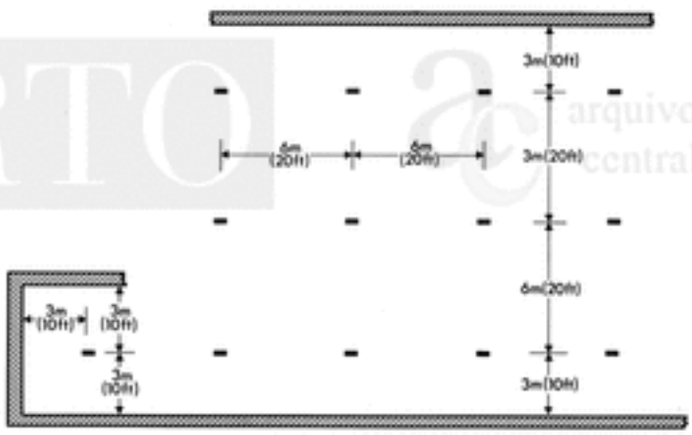
Normal Operating Temperature – 57°C (135°F).

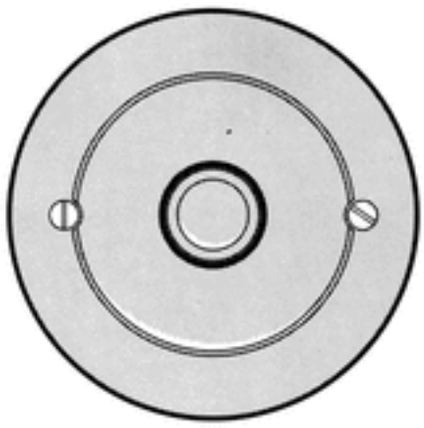
Switching Capacity – 1 amp at 50V DC or AC.

Important

Under no circumstances must any part of the detector be painted. Operational characteristics will be altered by differences in heat absorption, radiation and heat insulation.







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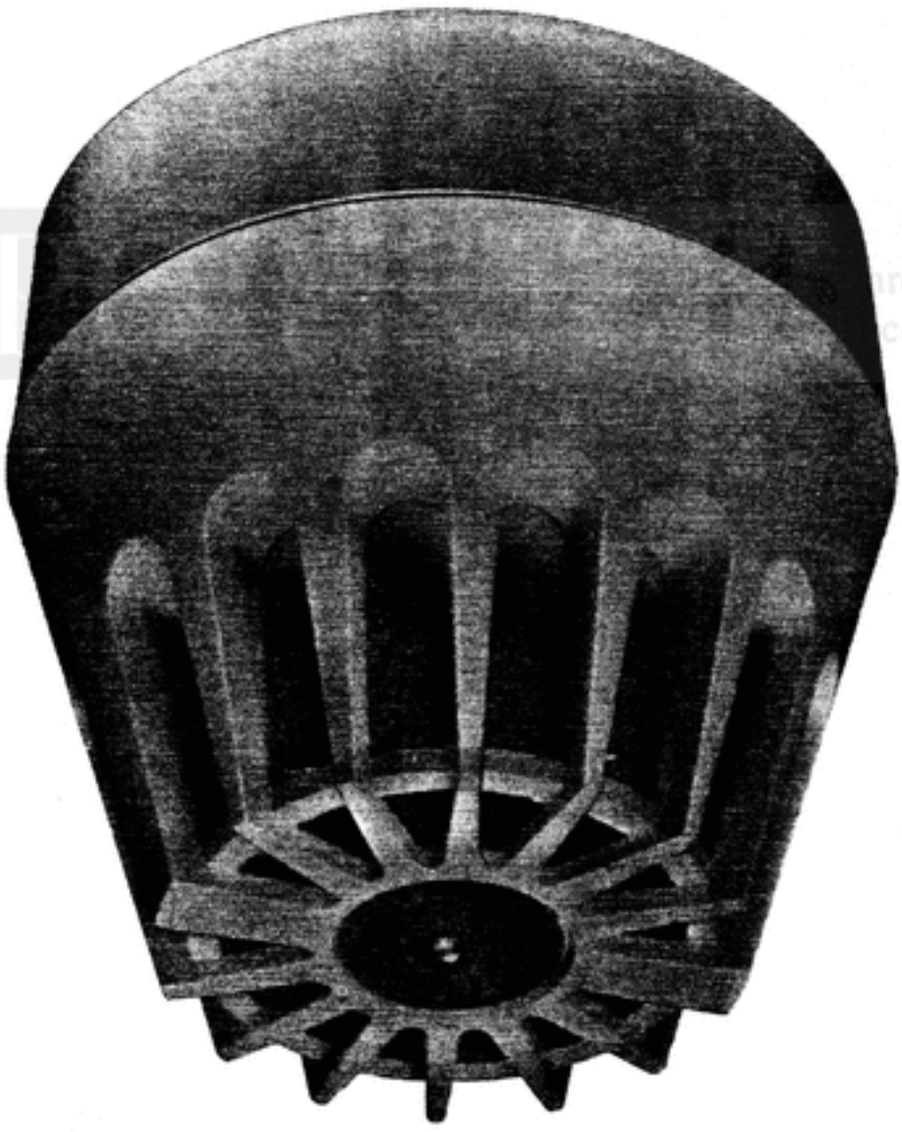
CHLORIDE GENT

7105 Heat Detector Publication 1039



7105 heat detectors are set to a nominal operating temperature of 57 C (135 F) to give the best possible results for normal fire alarm purposes, consistent with early warning and absence of false alarms

Siting

Each detector is capable of protecting an area 6 metres (20 feet) square. The minimum number of detectors required for covering any particular area can therefore be calculated by dividing that area in square metres by 36.

Detectors should always be sited more than 500mm from walls, except where total area is less than one metre.

Detectors should normally be arranged in rows, and where possible with the rows parallel to the longest walls of the area to be protected. The rows adjacent to these walls must not be more than 3 metres (10 feet) distant from them, and with the detectors at the ends of each row not more than 3 metres (10 feet) from their adjacent walls. The distance between rows should normally be 6 metres (20 feet) and with detectors in rows spaced at 6 metres (20 feet) intervals.

Inconveniently shaped areas may make it impossible to maintain the spacing of rows at 6 metres (20 feet) and in these circumstances it is permissible to increase the spacing between rows up to a maximum of 7.6 metres (25 feet) always providing that the distance between detectors in the rows is reduced to 4.8 metres (16 feet) to ensure that the area of 36 square metres covered by each detector is not exceeded. The 3 metres (10 feet) spacing between detectors and walls must never be exceeded.

Corridors

In corridors the maximum spacing should be 12 metres (40 feet) with the two end detectors not more than 6 metres (20 feet) from the end wall, partition or door.

Lift Wells, Stairs, etc.

At least one detector should be fixed at a position in each storey not more than 1.5 metres (5 feet) distant from each well-light, area, lift well, staircase or other flue-like opening. Additional detectors should be provided to deal with any features presenting special fire risk.

Ceiling Height

The spacing of detectors given above is suitable for normal ceiling heights of up to 6 metres (20 feet), but where ceilings are particularly high please consult us for our recommendations.

Note

It may be necessary to reduce the dimensions and areas given if the ceiling is intersected by beams measuring more than 51 cms (20 inches) in depth. The incorrect siting of detectors can be responsible for the initiation of false alarms by such causes as brilliant sun shining through glass windows, detectors being adjacent to the hot water pipes of heating systems, or unimaginative siting in kitchens, etc.

Important

Under no circumstances must any part of the detector be painted. Operational characteristics will be altered by differences in heat absorption, radiation and heat insulation.

Specification

7105-01: Latching version for open circuit working
Supply Voltage: 16-32V d.c., 23-25V a.c. at 40 to 100Hz.
Quiescent Current: < 100uA
Alarm Current: The detector can pass a maximum current of 400mA in the 'fired' condition (external current limit required)
Alarm Voltage: In the 'fired' condition the voltage drop across the detector is approximately 4.2 volts.
Fire Indication: Red LED on grill.

7105-03: Non latching version for open circuit working
Supply Voltage: a.c. or d.c. up to 50V
Switching Capacity: 1A a.c. resistive max 0.5 d.c. resistive max
NOTE: Not to be used with Model 724 unless extra load relay is used. A Model 78 latching relay must be fitted in the Model 75 Mk II Fire Alarm Unit when used with this detector.

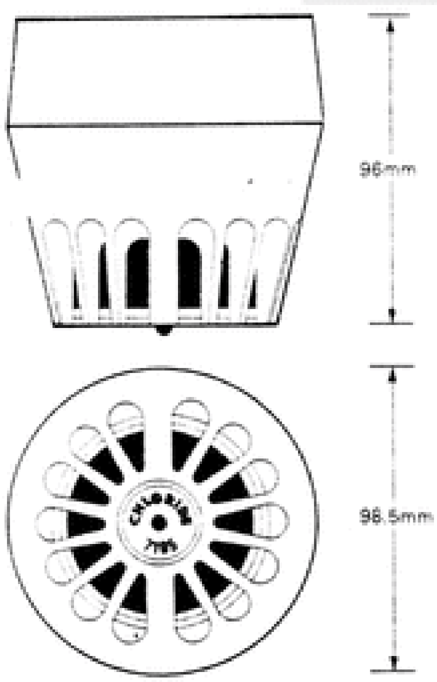
7105-04: Non latching version for closed circuit working. Voltage and current ratings as for 7105-03. Monitoring resistor may be added.
Connections: 5 gold plated brass contact pins to mate with gold plated beryllium spring contacts in code 7912-01 base.
Casing: White 'Noryl' Engineering grade plastic
Dimensions: Without base, dia 98.5mm × height 78mm (from top of LED to bottom of contact pins)
with base, dia 98.5mm × height 96mm

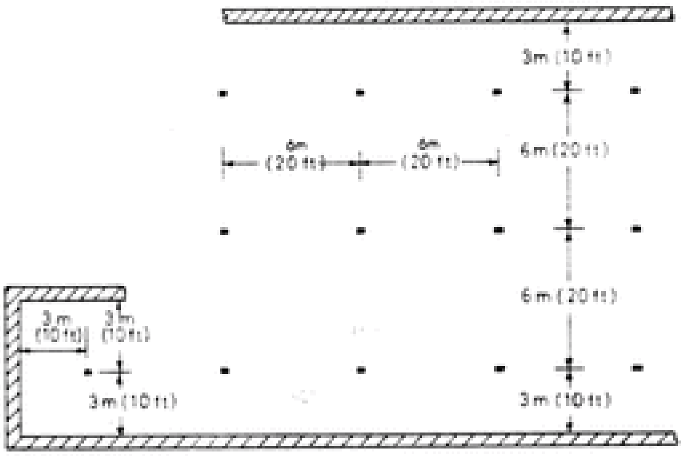
Mounting Base

7912-01
Fixing holes are provided, 51mm (2 ins) to 60 (2⅜ ins) centres, for mounting to 70 mm (2¾ ins) square box, 51mm (2 ins) BESA box.
Terminals – adequate provision is made within the 7912-01 for the termination of most normally used cables.

Information required on orders

1. Quantity of detectors.
2. Code number of detectors.
3. Quantity of bases.
4. Code number of bases.
5. Value of monitoring resistor (if any) or voltage and type of associated control equipment.





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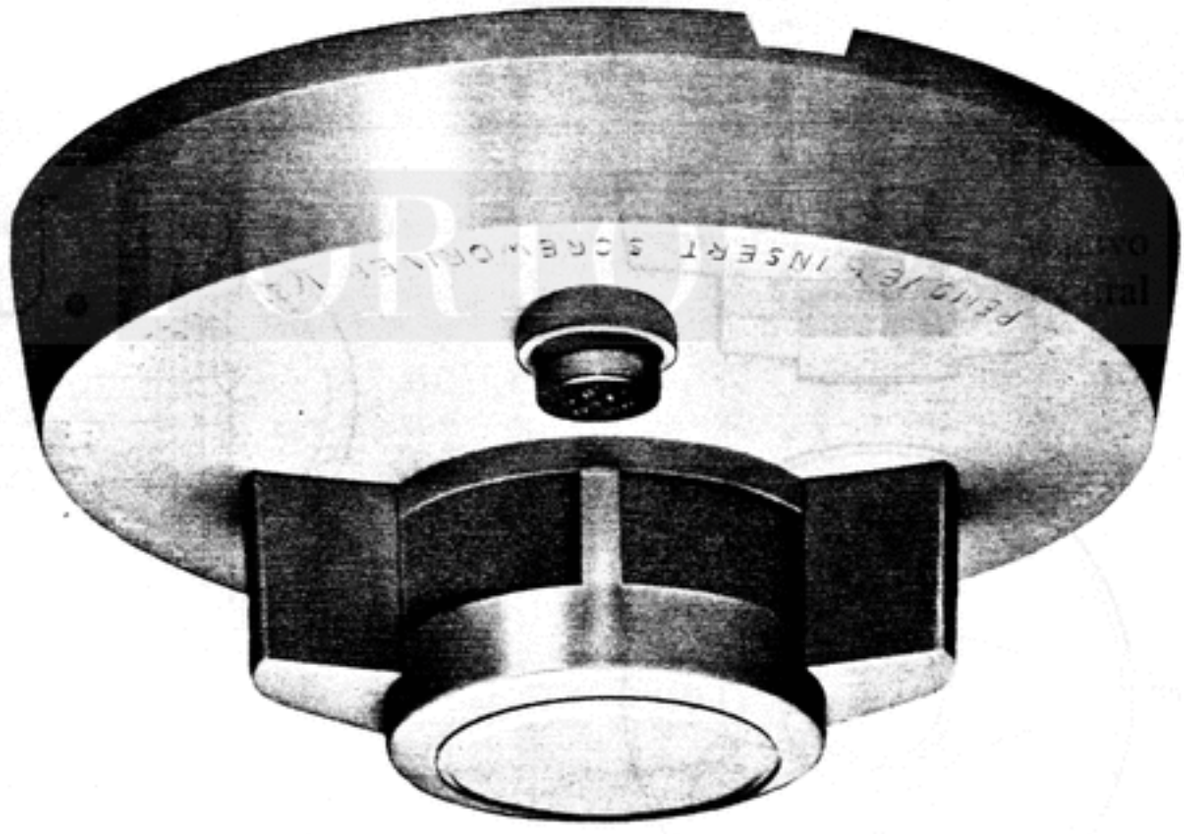
630-60

CHLORIDE GENT

3040 Optical Smoke Detector



The Chloride 3040 Optical Smoke Detector has been designed to provide a highly reliable method of detecting smoke from both slow smouldering and fast burning fires.

The 3040 Detector operates on the principle of light scatter, utilising a Light Emitting Diode (LED) and incorporates a Heat Detector. It contains no radio-active element, and can be installed in areas of relatively high air-flow or where the air may be charged with static electricity.

Quick and easy to install, the Chloride 3040 incorporates an alarm relay allowing connection to practically any existing ancillary equipment and systems. Requiring no calibration and the minimum of maintenance throughout its lifetime, the 3040 Detector has low operating current consumption.

Neat and unobtrusive the 3040 Detector has a visual indicator light mounted on its external surface to provide an indication of an alarm condition or detector fault.

630-59

Operation

The Chloride 3040 Optical Smoke Detector operates on the long-proven principle of smoke detection by light scatter, – the Tyndall effect.

The smoke chamber of the detector is black and does not reflect light. A concentrated parallel beam of light is projected across the smoke chamber and an alarm photocell is fitted in a special housing at right angles to the light beam. Under normal conditions no light reaches the photocell.

When smoke enters the smoke chamber the light is scattered by reflection from the smoke particles and affects the photocell. The small electrical charge which results is amplified and actuates a relay, thereby initiating the operation of the associated alarm circuit.

Should the amount of smoke increase at greater than a predetermined rate the detector sensitivity will be automatically increased thus shortening the detection period.

Installation

If it is intended to mount the detector direct to the ceiling, or if surface wiring is to be used without a conduit box, then a code 7910-01 spacing ring must be used.

Specification

Type 3040

Operating voltages – 24V DC
other voltages available on request

Current consumption – 5mA (0.005A) nominal

Alarm contacts rating – 2A at 30V DC Resistive load 0.5A at 125V AC

Smoke Detecting Light Source – Light Emitting Diode (LED) with 30 year life expectancy

Smoke sensitivity setting – The Detector in its normal state will give an alarm when the smoke in the smoke chamber reaches approximately 4.5% per metre (0.2dB per metre) obscuration.

Heat Detector setting – 57°C (135°F) nominal

The alarm relay is provided with 3 sets of change over contacts, one set of which will normally be used for signalling to the control and indicating equipment leaving the other two sets free for the control of ancillary equipment such as, smoke dampers or door holders.

Versions of the detector are available with contacts locked in the alarm condition until electrically reset or alternatively the contacts automatically reset when smoke is cleared from the detection chamber.

Mounting – The back-plate has holes for attachment to 2ins BESA, and 2¾ ins Mk Box.

Dimensions – Diameter 152mm (6ins) Depth 73mm (2.875ins)

Routine Check Testing

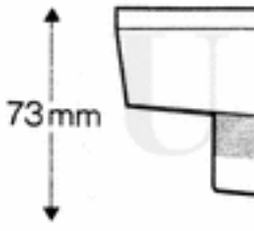
Routine on site testing of Detectors can easily be carried out by the application of a magnet at a position which is identified on the Detector. This operates an internal reed switch which causes a special test light within the Detector to illuminate and reproduce the condition which occurs when smoke enters the detection chamber. The injection of smoke can also be used to test the Detector.

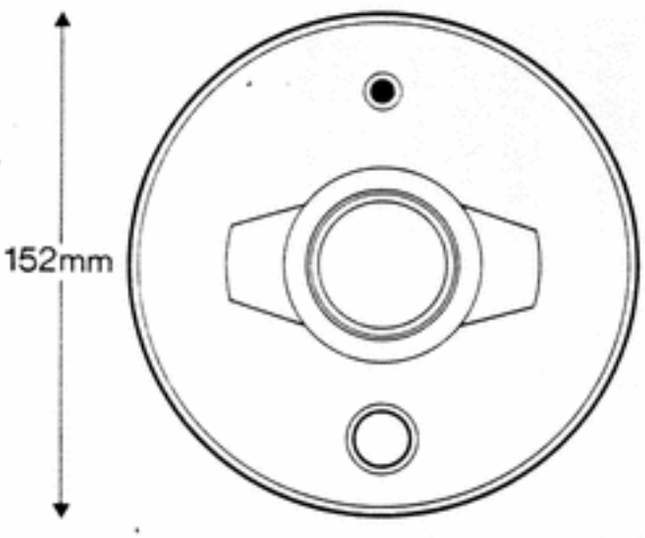
Power Circuit Supervision

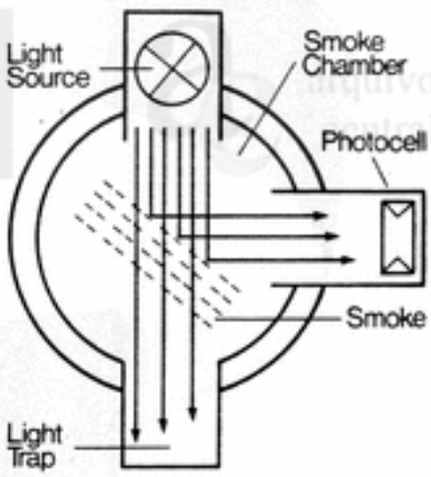
For power circuit supervision an End of Line Relay, Type No. 2047 can be supplied.

Information required on order

1. Quantity of detectors
2. Type of detector
3. Voltages
4. Surface or conduit box mounting







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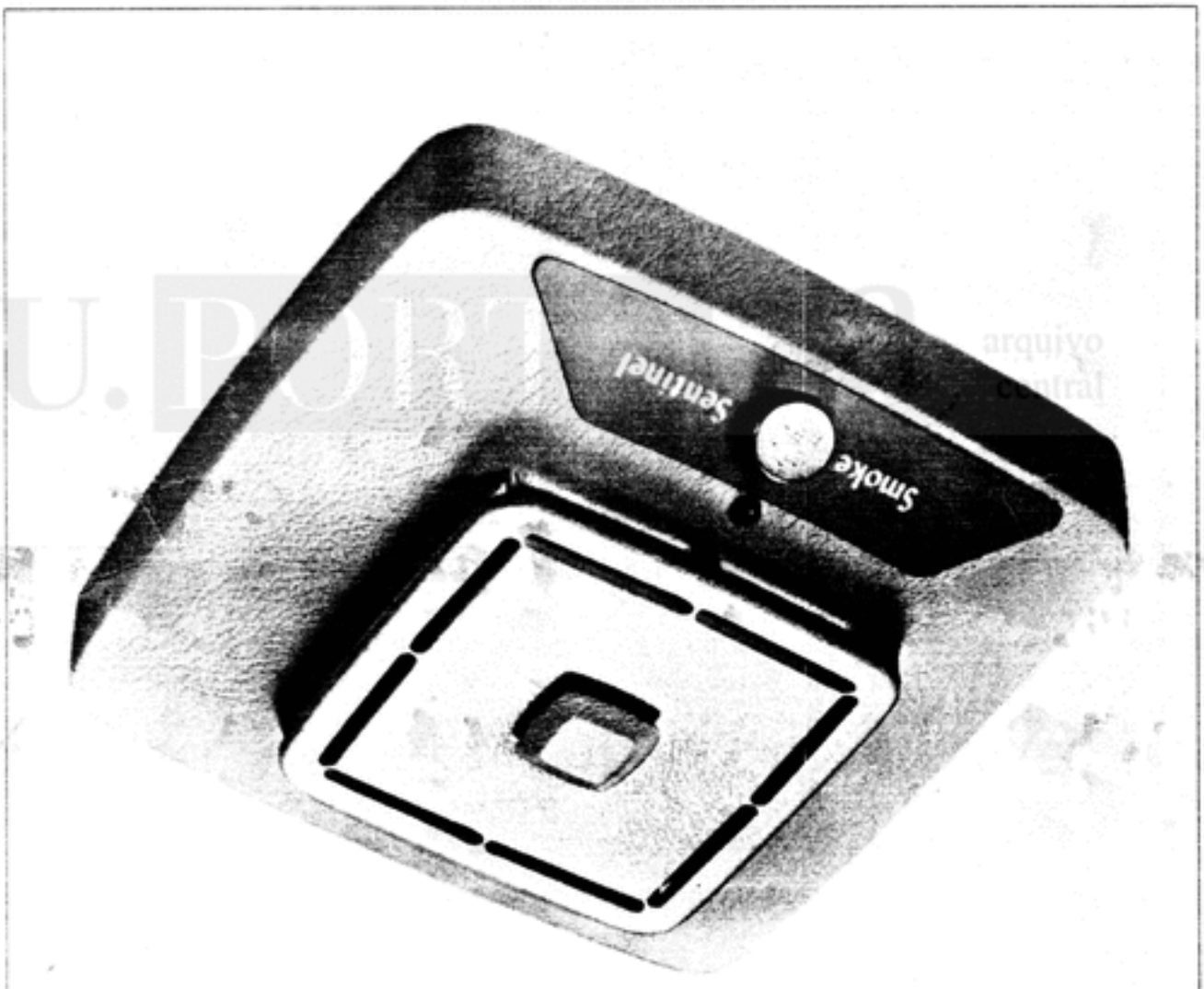
630-58

CHLORIDE GENT

3052/53 Series Mains Operated, Domestic Optical Smoke Detector Publication 1034



The 3052/53 Series of Domestic Optical Smoke Detectors features highly sensitive, fast acting, self-contained photoelectric units designed to operate from a 240V AC mains supply.

Each Smoke Sentinel has its own audible alarm sounder and externally operated test switch.

Incorporating a fully regulated Light Emitting Diode (LED) for longer operational life, together with other solid state components, the Smoke Sentinel utilises the well proven optical light-scatter method of detection. It contains no radio-active element.

Small, compact, and unobtrusive, the Smoke Sentinel can be easily installed on walls or ceilings and requires the minimum of maintenance.

630-57

Operation

The detector maintains a constant vigil in the area of installation and instantly sounds an alarm when smoke entering the Detector reaches obscuration of less than 3.75% per metre the equivalent of 0.15 dB per metre.

A regulated amount of light from the LED, focused to form a sharp beam, is purposely introduced into the Smoke Chamber, which is a light-tight enclosure open to the atmosphere.

Smoke particles entering the Smoke Chamber cause part of the light beam to reflect onto the surface of a photoelectric cell. Exposure of the cell to this reflected light causes its resistance to decrease, triggering the alarm at a predetermined level.

The circuit includes a regulating photocell that continuously monitors the LED intensity and adjusts it as necessary.

Models 3052T, 3052TM and 3053T incorporate heat detectors which are activated when the ambient temperature reaches 57°C (135°F).

Each model is equipped with an externally operated test switch which simulates the action of reflected light from the LED when smoke is present in the Smoke Chamber.

Installation

Smoke Sentinels are designed for mounting on ceilings or walls. They should be located in hallways or areas adjacent to bedrooms so that fire can be detected before it reaches sleeping persons.

Smoke Sentinels should be positioned with at least 304mm (12ins) between the edge of the detector case and any junction of wall to ceiling or wall to wall.

Specification

3052/3053 Series.

Operating voltage – 240V AC

Operating current – 0.04 A

Light source – Light Emitting Diode with approx. 30 year life expectancy

Smoke sensitivity setting – Nominal 2.5% per metre 0.1 dB per metre

Heat Detector setting – 57°C (135°F) (Models 305T, 305TM and 3053T only)

Alarm audibility – 85 dBA at 3m (10ft)

Dimensions 160mm square (6.3ins) 68mm depth (2.7ins)

3052 series – These Detectors are equipped with pigtails for mounting directly to a standard junction box.

3053 series – These Detectors are equipped with a 274.3cm (9ft) mains lead.

Models available

3052 series

3052 – Photoelectric Smoke Detection

3052T – Photoelectric Smoke Detection with Heat Detector (57°C)

3052M – Photoelectric Smoke Detection with "Tandem" Circuit allowing interconnection of up to six Detectors.

3052TM – Photoelectric Smoke Detection with Heat Detector (57°C) and "Tandem" Circuit allowing interconnection of up to six Detectors.

3053 Series

3053 – Photoelectric Smoke Detection

3053T – Photoelectric Smoke Detection with Heat Detector (57°C).

Information required on Order

1. Quantity of Detectors
2. Model Number

CHLORIDE GENT

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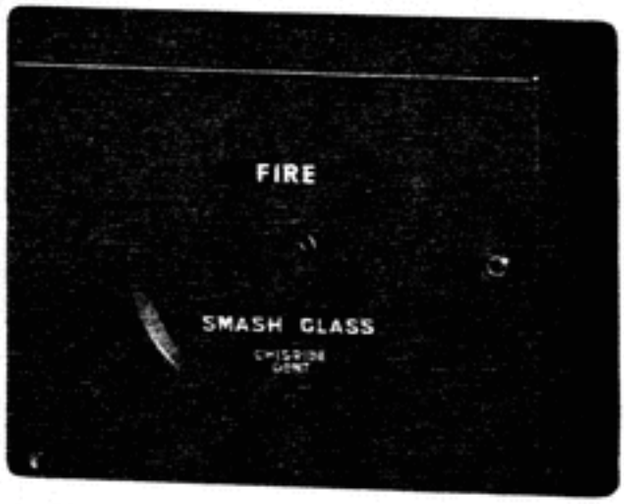
CHLORIDE GENT

1102 Manual Call Point

Surface Fixing



Flush Fixing

The Chloride Gent 1102 Manual Call Point provides a simple 'break glass' means of raising an alarm. The 1102 is immediately apparent when installed yet unobtrusive in the most modern setting.

The units are usually sited on exit routes, and in particular on the floor landings of staircases.

Manual call points should be fixed at a height of 1.4m (4 ft 6 ins) above the floor, with 30m or less between units and in clearly visible locations.

Operation

The unit can be installed in both open and closed circuit systems. When wired for open or closed circuit working the circuit responds immediately the glass is smashed.

Installation

The model 1102 can be surface fixed, or flush mounted by using either a model 1103 black cobex or model 1103 ss, satin stainless steel, flush fixing plate.

20mm conduit entries are provided in top and bottom of case for through wiring and the unit can be mounted in the horizontal or vertical position (in the vertical position the hinge on the case front must be at the bottom). Instruction plates can be turned to conform. Holes are fitted with red polythene blind bushes, the centres of which can be forced out to accommodate P.V.C. or T.R.S. cable. A back wiring entry is also provided. Double terminals are provided to facilitate for independent input and output connections.

Associated Equipment

Code 4902 - 02 Hammer and Chain

Front Glasses

Model 1106 - Front glass fitted as standard. Reduces the possibility of accidental breaking to a minimum.

Model 1107 - Front glass 'scored' with 32mm (1¼ ins) circle for easier breaking.

Model 1108 - Front glass 'scored' with 55mm (2³⁄₁₆ins) circle. Can be broken by a fingertip blow. Only suitable where the possibility of accidental or malicious breaking is minimal.

Model 1107 and 1108 are supplied and charged separately, for fitting by the installer, in place of the standard glass.

Specification

Case - Shatterproof and corrosion resistant red engineering plastic. (G.E. Noryl SE 1).

Cable Entry - 20mm conduit entry in top, bottom and rear.

Terminals - Double terminals.

Current carrying capacity (siren or bells running load) - Up to 250V AC 10A
12/24V DC 10A
48V DC 3A.

Dimensions

Model 1102 Call Point

114mm (4½ ins) wide x 83mm (3¼ ins) high 51mm (2 ins) deep. Front Glass Aperture 57mm (2¼ ins) diameter (2,550 sq. mm).

Model 1103 and 1103 ss Flush Fixing Plate

133mm (5¼ ins) x 102mm (4 ins) x 2mm (⅛) thick.

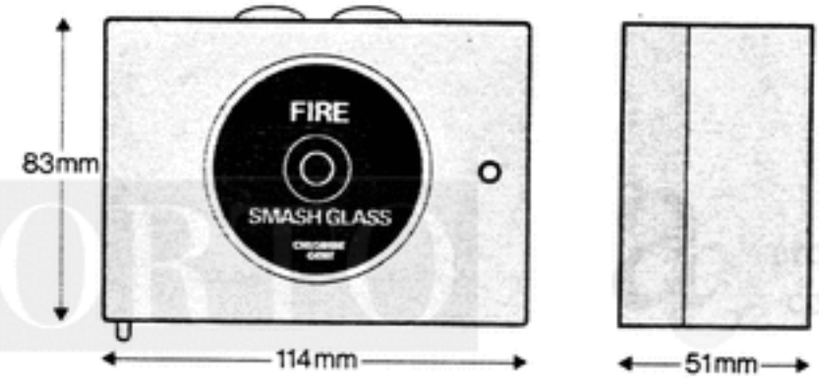
Weight

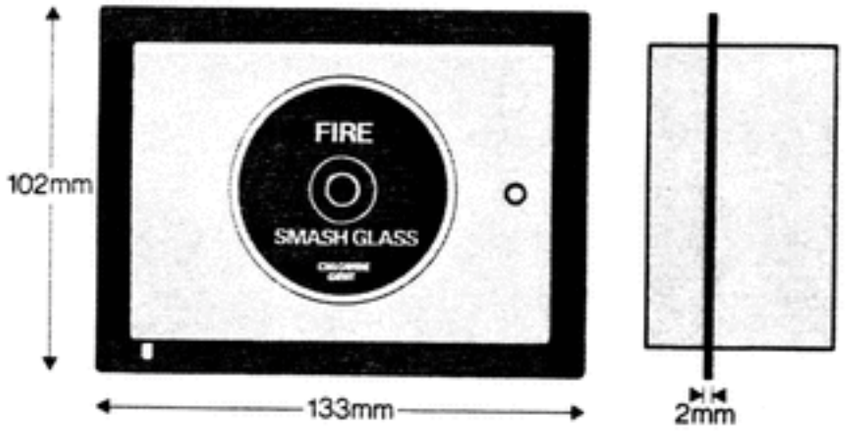
Model 1102 Call Point

306 gms (10⅘ ounces)

Model 1102 with model 1103 or 1103 ss Flush Fixing Plate

350 gms (12 ounces)





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Publication 1010 October 1978

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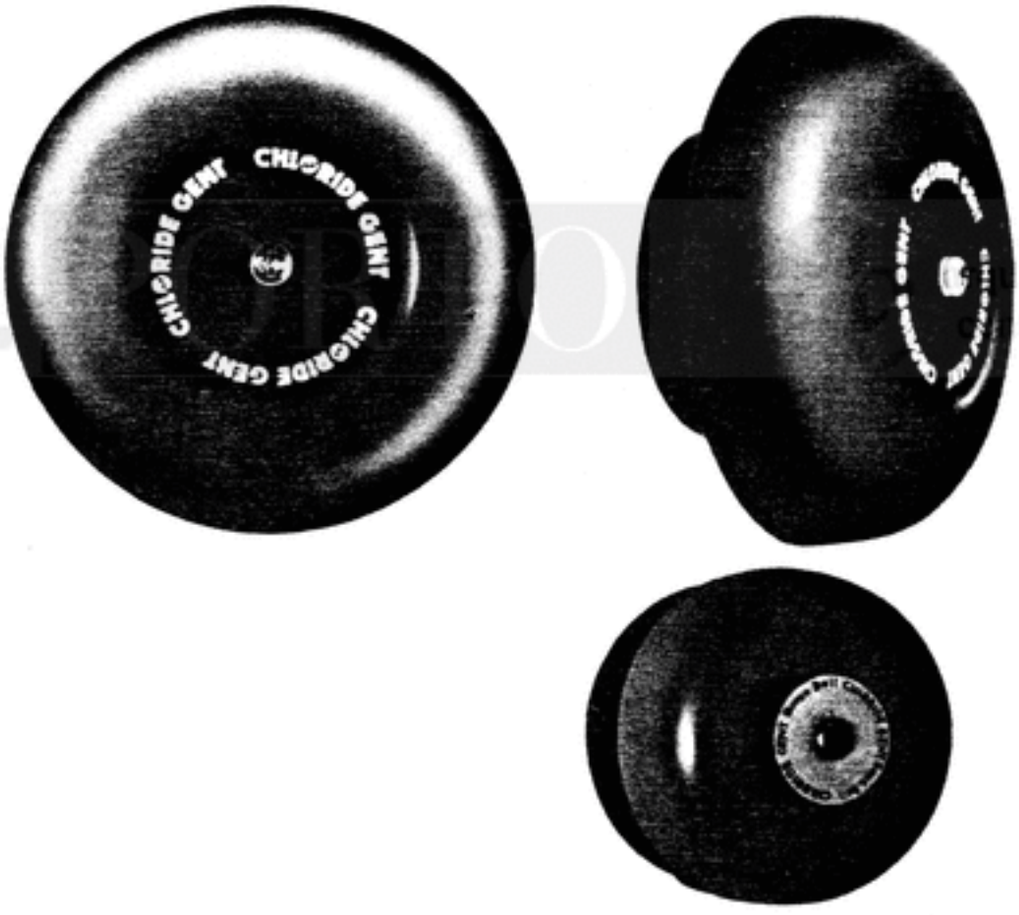
CHLORIDE GENT

Model 500 and 505 Dome Bells Publication 2011



Chloride Gent Model 500 AC type and Model 505 DC type Dome Bells offer reliable, efficient operation at a competitive price.

The bells provide a loud clear ring of excellent tone and feature a robust striker mechanism using the minimum number of working parts.

Available with gong diameters of 102mm (4 ins) and 152mm (6 ins) all models use a standard size, base and mechanism. The 152mm (6 ins) model is supplied with a polypropylene dust cover over the striker unit. While not weatherproof, these bells will operate under most adverse conditions.

Both models are suitable for use with surface or flush conduit or for open wiring.

The 152mm (6 ins) models can be 'semi flush' fixed, by sinking the base of the bell into the wall by means of a square fixing box.

Model 500 bells feature a contactless striker, requiring no adjustment for wear. The movement does not interfere with radio or television reception.

Fixing Details.
Bells must be mounted with striker pointing towards bottom half of bell.

Flush Conduit Box Mounting. Can be fixed to
(a) 2 ins BESA box
(b) square type switch box 60mm (2⅜ ins)
(c) Canadian Box 70mm (2¾ ins) diagonal centres

Surface Conduit. Conduit entries are provided in the body of the bell.

Open Wiring. Polythene blind bushes in conduit entries can be pierced to take cable and a separate earth terminal is provided.
Full fixing instructions together with screws are provided with each bell.

Sunk Fixing. Where the bell is to be unobtrusively sited the 152mm (6 ins) model can have the base sunk into the wall. A 'flush pack' (Model 508) containing a 102mm (4 ins) square box, screws and fixing instructions, is available for this purpose.
The square box is drilled for 20mm conduit entry.

Associated Equipment
Model 508 – Sunk Fixing Box.

Specification
Base – Shatterproof and corrosion resistant black engineering plastic (GE Noryl SE1).
Gong – Press steel.
Finish – Gong bonderised and stove enamelled goose grey.
Gong fixing Screw and Striker – Stainless steel.
Cable Entry – 20mm conduit entry at back and in opposite sides of base for through wiring, fitted with polythene blind bushes. Base arranged for horizontal or vertical cable entry.
Terminals – To accommodate 2 cables with core cross sectional area of 1.5mm².
Labelling – A specialist labelling service is available at no extra charge on bulk purchases of 152mm (6 ins) only.
NB. The 102mm (4 ins) version does not include a recess for specialist labelling.

AC type, Model 500 –

Volts	VA or Watts	Amps	D.C. Resistance of coils (ohms)	Decibel Rating at 3m (10ft)	
				102mm (4 in)	152mm (6 in)
24	5.8	0.24	30	82	92
200/250	4.0/6.0	0.020/0.024	2800	82	92

/60 cycles per second.
Bells for other AC voltages are available in our Models 510 and 145 ranges.

DC type, Model 505 –

Volts	VA or Watts	Amps	D.C. Resistance of coils (ohms)	Decibel Rating at 3m (10ft)	
				102mm (4 in)	152mm (6 in)
6	1.08	0.18	12.5	80	85
12	0.96	0.08	70	80	85
24/48	1.2/4.8	0.05/0.1	220	80/84	85/91

Bells for other DC voltages are available in our Model 620 and 145 ranges fitted with Television interference suppressor.

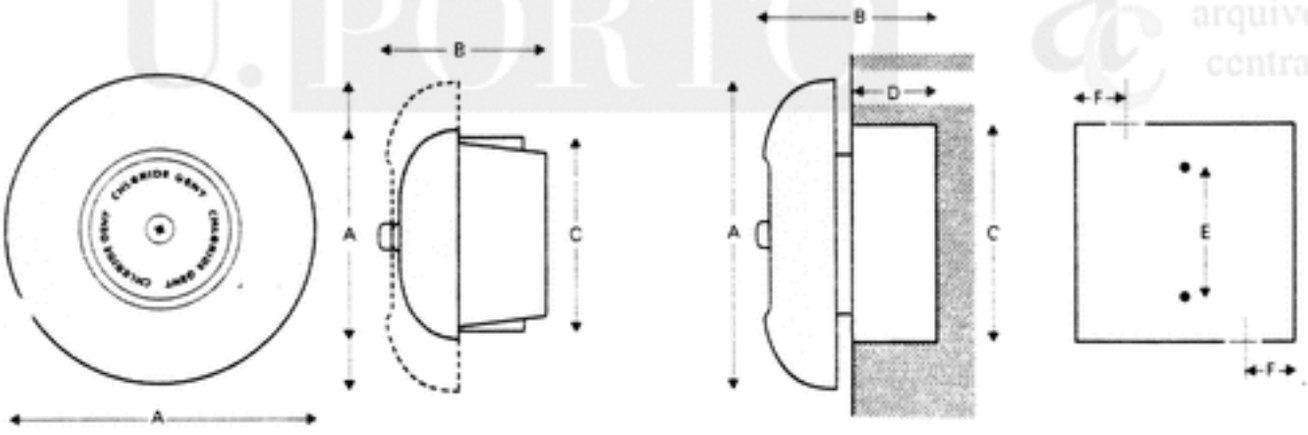
Dimensions

Gong		A		B		C	
mm	ins	mm	ins	mm	ins	mm	ins
102	4	102	4	76	3	96	3¾
152	6	152	6	81	3³⁄₁₆	96	3¾

Flush Fixing 152mm (6 ins) size only

A		B		C		D		E		F	
mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins
152	6	91	3⁵⁄₁₆	109	4¼	41	1⁹⁄₁₆	63	2½	25	1

Weight – 102mm (4 ins) – 0.8 kg (1¾ lbs)
– 152mm (6 ins) – 1.2 kg (2¾ lbs)



Surface fixing

Flush fixing

Flush box fixing and conduit holes

Information Required on Order
1) Quantity
2) Model number
3) Voltage
4) Size
5) Specialist labelling instructions on bulk orders.

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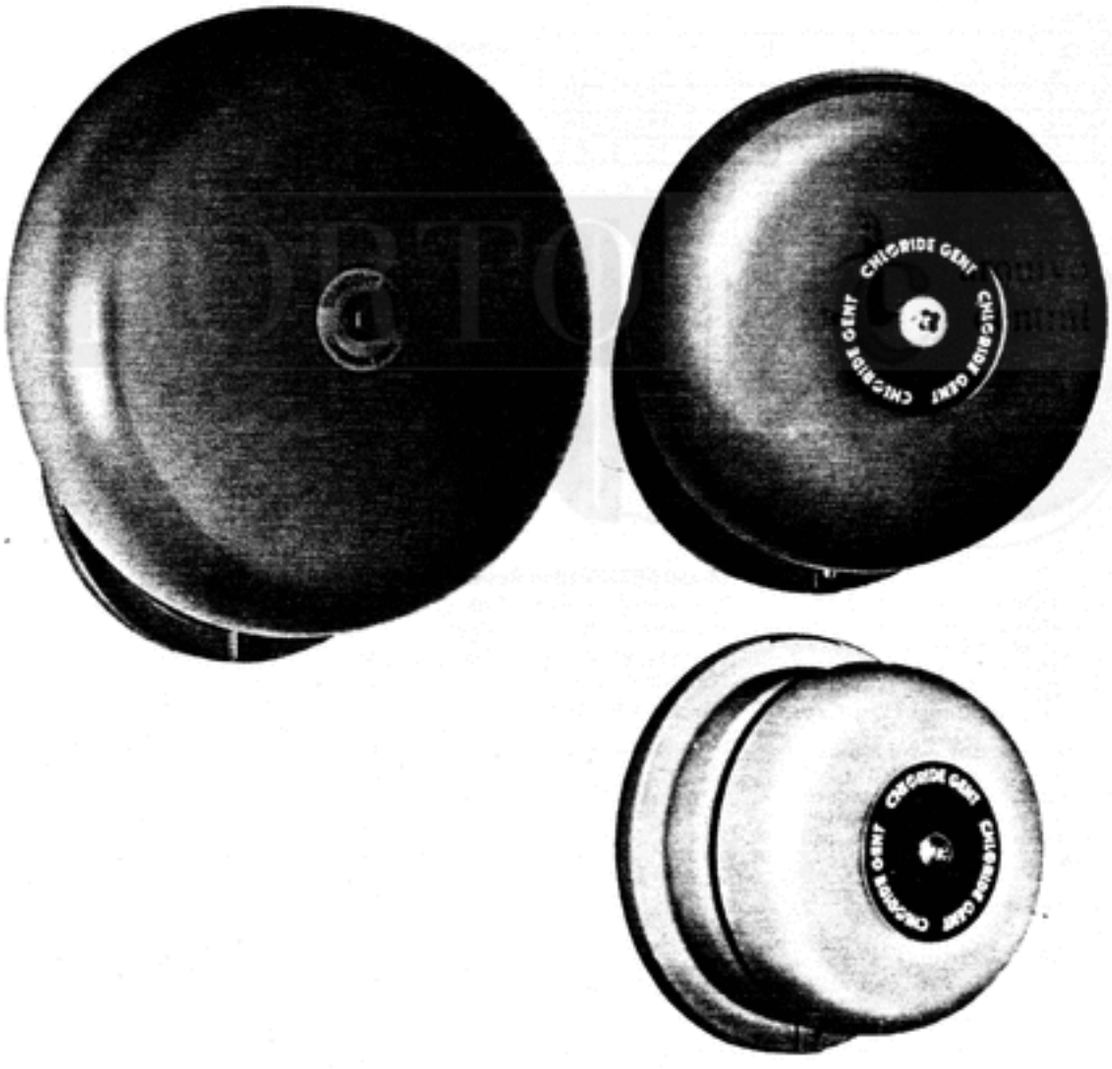
CHLORIDE GENT

Model 510 and 620 Tangent Bells Publication 2010



Chloride Gent Model 510 AC type and 620 DC type are designed to produce a loud, clear ring. Available with gong diameters of 152mm (6ins), 203mm (8 ins) and 254mm (10 ins), they are elegantly styled, but rugged enough for most arduous conditions.

The simple fixing method, by means of a universal back plate reduces installation costs. Models 510 and 620 are stove enamelled and finished in grey as standard. Red gongs are available for fire alarm installations.

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AC Type - Model 510 has automatic compensation for plunger wear, no adjustment required. The contactless movement does not interfere with radio or television reception.

DC Type - Model 620 where required for operating on lower voltages, are suitable for a wide voltage range in all sizes, namely: 6 to 12, 12 to 24 and 24 to 48. When the bells are operated on the *lowest* voltages of the range they will take the *maximum* current consistent with adequate volume. Alternatively, when operated on the *highest* voltages of the range they will provide the *maximum* volume.

Associated Equipment

Model 563 Weather Resistant Conduit Box

When necessary the bell can be completely sealed against the weather by using a special Conduit Box. Zinc pressure die casting. Corrosion resisting. Standard finish stove enamelled grey. Drilled and tapped with 4 - 20mm conduit entries and fitted with blind bushes. As illustrated below.

Model 564 Spacing Ring

Where surface conduit is to be used on interior work a spacing ring can be supplied which allows the bell to be raised from the wall. A 20mm conduit entry is provided which can be used for either vertical or horizontal wiring. Sheet steel - bonderised and stove enamelled grey.

Specification – Models 510, 620

Cover - Zinc pressure die-casting. Dust and dirt resistant.

Base & Gong - Pressed steel.

Sizes - 152mm (6 ins) 203mm (8 ins) 254mm (10 ins) gong diameters.

Finish - Standard - stove enamelled goose grey. Special - Gong stove enamelled red for fire alarms. Special - Gong polished chrome (152mm (6ins) size only).

Wiring Entries - 29mm (1⅛ ins) diameter knock-in centre of back plate. (See also Weather resistant Conduit Box Model 563).

Terminals - To accommodate 2 cables with core cross sectional area of 1.5mm².

Labelling - A specialist labelling service is available at no extra charge on bulk purchases of 203mm (8 ins) or 152mm (6 ins).

NB. The 254mm (10 ins) version does not include a recess for specialist labelling.

AC Type – Model 510

Volts	VA or Watts	Amps	DC Resistance of Coils (ohms)
12	3.5	0.29	10
24	3.4	0.14	31
100/125	3.5/5.0	0.035/0.040	820
200/250	3.6/5.5	0.018/0.022	2,800

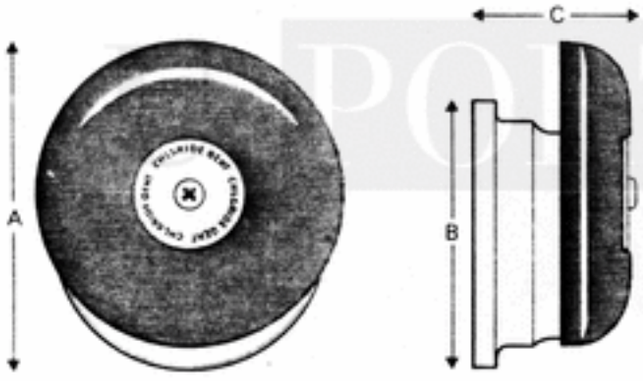
40/50 Hz - 60Hz at special request.

DC Type – Model 620

Voltage Range Low Consumption/ Max. Volume	VA or Watts	Amps	DC Resistance of coils (ohms)
6 to 12	1 - 2.4	0.18 - 0.2	12
12 to 24	1 - 2.4	0.08 - 0.10	48
24 to 48	1.2 - 2.8	0.05 - 0.06	200
100/125	3.5 - 5.0	0.035/0.040	750
200/250	5.0/7.5	0.025/0.030	3,000

Dimensions

Gong mm	Gong ins.	A mm	A ins.	B mm	B ins.	C mm	C ins.
152	6	178	7	178	7	105	4⅛
203	8	216	8½	178	7	111	4⅜
254	10	267	10½	178	7	117	4⅝



Sound Level – Decibel rating at 3m (10 feet).

Model	Volts	152mm (6 ins)	203mm (8 ins)	254mm (10 ins)
510	12	90	94	96
	24	90	94	96
	100/125	90	94	96
	200/250	90	90	96
Model	Voltage Range Low Consumption/ Max. Vol.	152mm (6 ins)	203mm (8 ins)	254mm (10 ins)
620	6 to 12	88/92	90/94	91/95
	12 to 24	88/92	90/94	91/95
	24 to 48	88/92	90/94	91/95
	100/125	92	94	95
	200/250	92	94	95

Weight

Model 510 - 152mm (6 ins) - 2.6kg (5¾ lbs)
203mm (8 ins) - 3.4kg (7½ lbs)
254mm (10 ins) - 4.2kg (9¼ lbs)
Model 620 - 152mm (6 ins) - 2.5kg (5½ lbs)
203mm (8 ins) - 3.4kg (7½ lbs)
254mm (10 ins) - 4.2kg (9¼ lbs)

Fixing - The bell is fixed by a special back plate. Distance pieces are provided to raise the back plate to accommodate open wiring. Full fixing instructions together with screws and other accessories are provided with each bell.

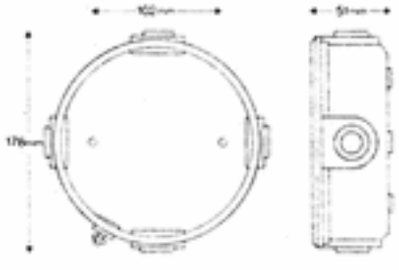
Information Required on Order
1) Quantity
2) Model number
3) Voltage
4) Size
5) Specialist labelling instructions on bulk orders.

Model 563 Weather Resistant Conduit Box

Dimensions - 178mm (7 ins) outside diameter x 51mm (2 ins) deep.

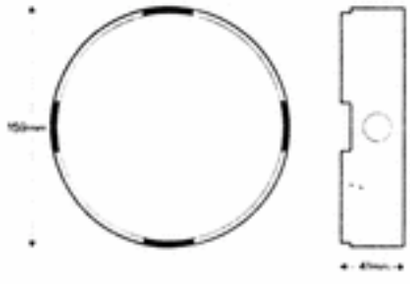
Fixing Holes - 102mm (4 ins) centres on horizontal centre line.

Weight - 1.4kg (3lbs)



Dimensions - 159mm (6¼ ins) outside diameter x 41mm (1⅝ ins) deep.

Weight - 184 gms (6½ ounces).



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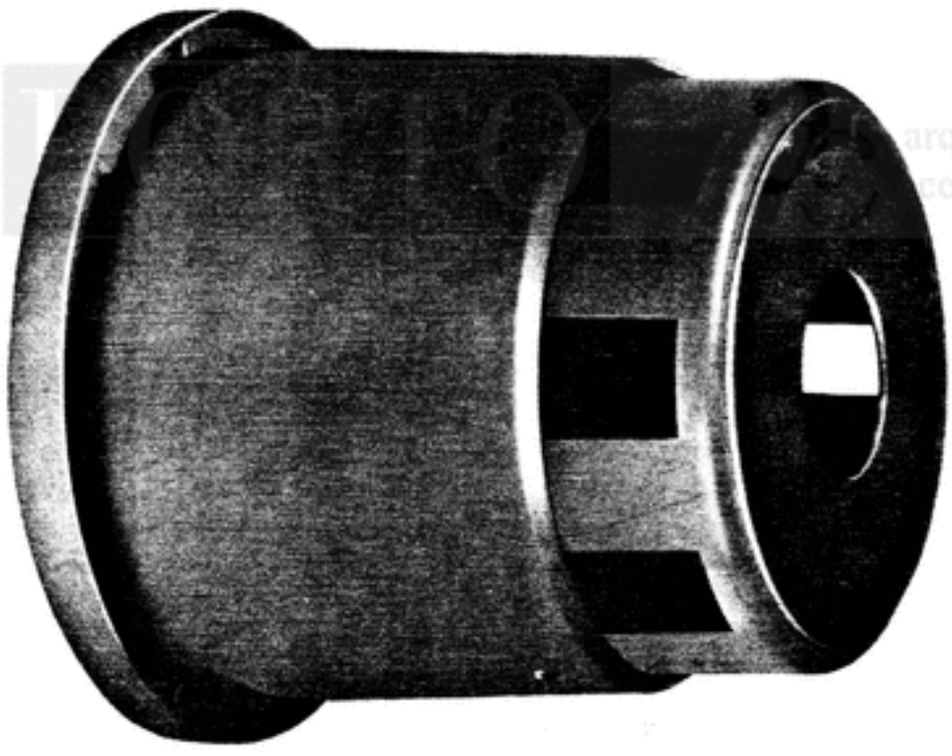
CHLORIDE GENT

Model 1501 Miniature Siren Publication 2015



The Chloride Gent Model 1501 Strident Junior Siren provides a large sound output at an economical cost. It is compact, robust and highly efficient and ideally suited to most indoor applications, especially where the penetration of industrial noise is required.

The distinctive sound also makes it easily distinguishable from other sound signals.

The Model 1501 is available for both extra low voltage and mains operation.

Installation

The main housing is of grey 'Noryl' moulding which is a self extinguishing and shatterproof industrial plastic. The rotor is glass-filled red 'Noryl' for additional strength.

The backplate is designed to accommodate either flush or surface wiring. The main body is simply connected to the backplate by a bayonet type locking action. For surface wiring without a conduit box, spacing pieces are provided for raising the backplate from the wall.

Specification

Housing and rotor - Noryl moulding.

Overall Dimensions

Extra low voltage model - Diameter 89mm (3½ in). Length 84mm (3⅜in).

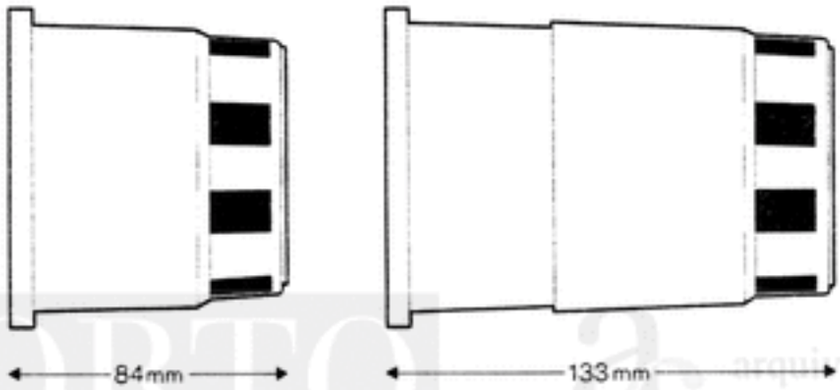
Mains voltage model - Diameter 89mm (3½ in). Length 133mm (5¼ in).

Weight - Extra low voltage 210 gm (7½ ounces). Mains voltage 507 gm 1lb 2 ounces.

Fixing - Backplate is designed to accommodate either flush or surface wiring, using a 2 ins BESA box or a Continental switch box to CEE14 (60mm centres).

Motor - Continuously rated.

Voltage	Current (amps)	Sound Level (dBA at 3m)
DC 6	1.25	93
12	0.86	95
24	0.42	98
AC 110/200/250	0.05/0.06	90/94



Low voltage model

Mains voltage model

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CHLORIDE GENT

Model 1500 Siren

The Chloride Gent Model 1500 Siren is a small high-frequency unit especially suitable for overcoming high noise levels within industrial confines.

With a continuously rated, totally enclosed motor, the siren is suitable for indoor use and can be operated by both AC and DC supplies. It can be installed in any attitude except with the rotor at the top.

630-41

Specification – Model 1500

Base box – Red Noryl SE1 Engineering Plastic

Wiring entries – Base box drilled for 20mm conduit on opposing sides for through wiring. It can be turned through 90° to conform to conduit run. Fitted with red polythene blind bushes, the centres of which can be forced out to accommodate PVC or TRS cable.

Fixing details – Base box drilled 5.08mm (2in) centres. The siren can be fixed in any position except with the rotor facing upwards.

Siren finish – Stove enamel cellulose paint

Audibility Range – in still air

Voltage rating	Range (approx) miles	Frequency Hz (cps)	dB rating at 3m (10ft)
200/250 AC/DC	0.75	800	110
24/48 DC	0.625 – 0.75	650 – 800	102 – 110

Voltage/current consumption

Volts	Current (amps)
200/250 AC/DC	0.75
24/48 DC	2 – 3

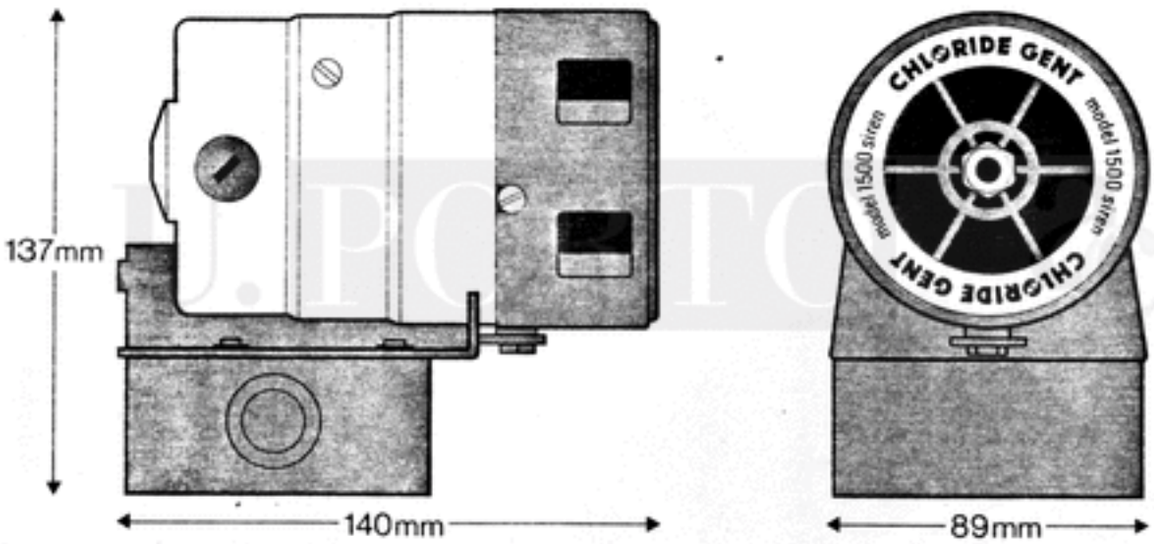
Dimensions

A		B		C	
mm	ins	mm	ins	mm	ins
137	5.375	140	5.5	89	3.5

Weight – 1.6 kg (3.5lb)

Information required on order

1. Quantity of sirens
2. Model Number
3. Voltage



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CHLORIDE GENT

CI/SfB (64)

UDC 654-923

Model 2500 & 2500 WT Warbler Publication 2021

The Chloride Gent Warbler Model 2500 is an audible alarm unit for use in fire alarm systems, start and cease work systems, class change systems or any system requiring a distinctive signal.
Having four different sound modes, that is, warble, continuous, sweep, and interrupt (pips). The unit adds a dimension of flexibility enabling the same or other units to give more than one easily recognised signal for different states of alarm. Remote switching between the continuous mode and either the warble or sweep modes (as selected) is another added feature, with the same unit being suitable for operating on either 24V DC or 48V DC.
Operating frequencies have been selected to comply with the recommendations of BS5839 Pt 1. 1980.

630-39

Specification

Case – Sheet Steel.
Finish – Stove enamelled textured goose grey
Dimensions – 170mm (6⅝in) wide × 172mm (6⅝in) high × 137mm (5⅜in) deep.
Weight – 1.92 Kg (4¼ lbs)
Wiring Entries – 20mm conduit entries in opposing sides suitable for horizontal or vertical wiring.
Terminals – To accommodate cable with core cross sectional area 1.5mm^2
Fixing - 2 – 5mm (⅜ins) holes on horizontal C/L at 127mm (5ins) between centres.
Temperature rating – – 10°C to + 55°C.

Nominal Frequencies

All measured at 24V DC.
Continuous:- 800 Hz
Warble :- 600 to 700 Hz
Sweep :- 300 to 600 Hz
Interrupt :- 500 Hz

Warble, Sweep and Interrupt all at a rate of 2 cycles per second.

Operating Voltages

24V DC + 33⅓% –50%
48V DC ± 25%
200/250V AC 40/60 Hz
110/125V AC 40/60 Hz.

Model 2500 WT

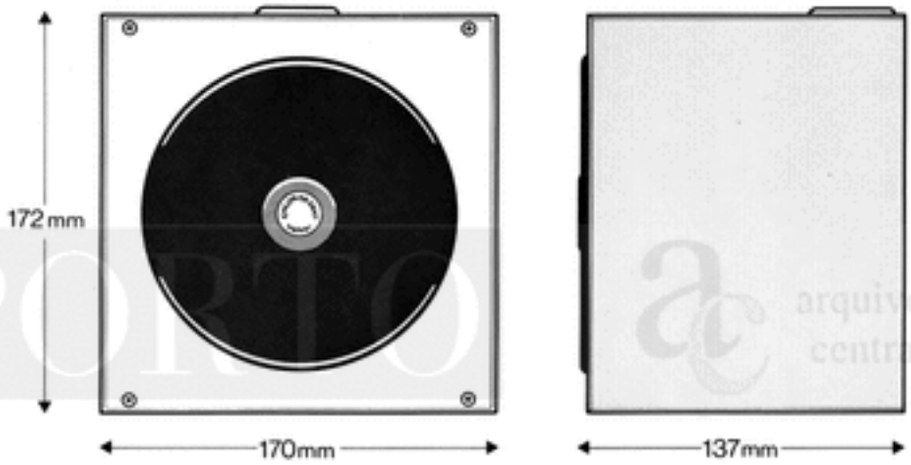
As Model 2500 but specially sealed for outside applications

Ordering Information

1) Quantity of warblers
2) Type of warbler
3) Voltage

Voltage	Current (amps)	Nominal Sound Level (dBA at 3m) +			
		Warble	Interrupt	Steady	Sweep
200/250V AC (40/50 Hz)	0.03/0.04	91	84	92	91
110/125V AC (40/50 Hz)	0.03/0.04	91	84	92	91
24V DC	0.035	91	84	92	91
48/50V DC	0.035	93	89	95	92

+ sound level measured in non-reflective environment at 3m. Directly in front of sounders at the stated nominal voltage.



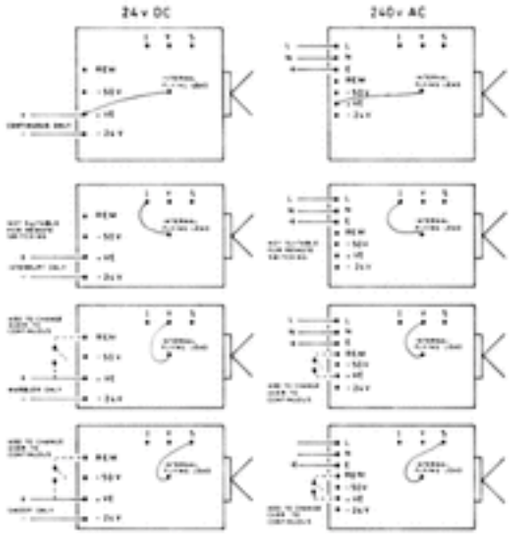
N.B.

1) For continuous sound initially – switch shown to be in normally closed condition – opening switch will change over to either warble (y) or sweep (s) as selected

2) For 48/50V DC operation connect external wiring to -50V in place of -24V as shown in above diagrams.

3) For 12V DC operation connect to -24V as shown – sound output is reduced.

4) "in" and "out" terminals
Provides for
a) Remote Connection (REM)
b) -50 VOLT Connection (-50V)
c) + VE Common Connection (+ VE)
d) -24 VOLT Connection (-24V)



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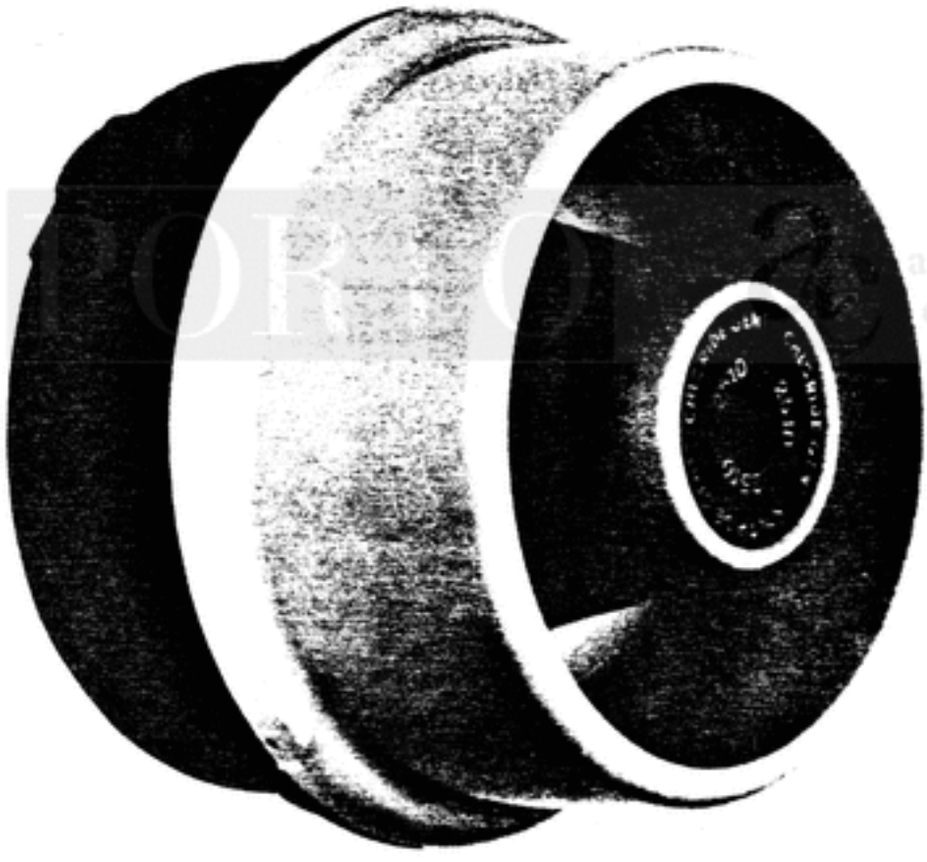
CHLORIDE GENT

2510 Electronic Sounder Publication 2022



The model 2510 electronic sounder has been designed to fit unobtrusively in most situations.

It has a neat circular appearance and is suitable for surface fixing. Two versions are available for operation with either 24V, 50V DC or 240V AC supplies.

The model 2510 is a two part construction allowing the back unit to be fixed to either wall or ceiling and the front 'horn' section is then fitted into place with a twist and lock action. The sounder is weather resistant in its standard form and an I.P. classification will be applied for.

The sounder can be set to generate a variety of sound signals, an intermittent tone, a sweep tone, a warble tone and it has a remote control facility to be operated from an exterior switch.

630-36

...ification

Case – Moulded thermoplastic
Colour – Goose grey/black
Dimensions – 132mm overall dia
106mm overall depth
Wiring Entries – 20mm conduit entries
Terminal – To accommodate cable with core cross sectional area 1.5mm²
Fixing – Circular back box. Front section locates into back box with 'twist and lock' action
Internal volume control
Temperature rating – – 10°C to + 55°C

Nominal Frequencies

Continuous operation – frequency 800Hz plus or minus 5% at nominal 24 volts DC
Nominal 24 volts DC
Warble operation – frequency 725 to 800Hz plus or minus 5% at nominal 24 volts DC.
Interrupt operation – frequency 800Hz plus or minus 5% at nominal 24 volts DC
Sweep operation – frequency 650 to 900Hz plus or minus 5% at nominal 24 volts DC

Operating Voltages

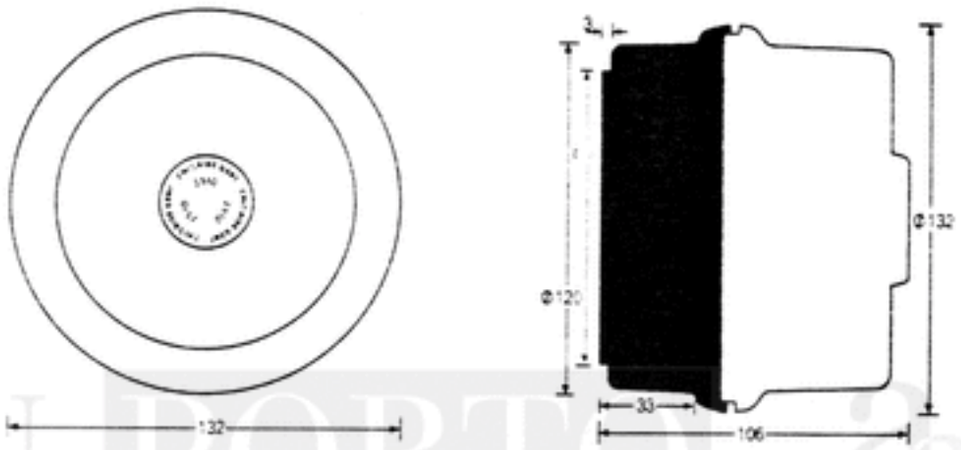
24V DC – 33⅓% – 50%
48V DC±25%
200/250V AC 40/60 Hz
110/125V AC 40/60 Hz

Ordering Information

1) Quantity of sounders
2) Type of sounder
3) Voltage

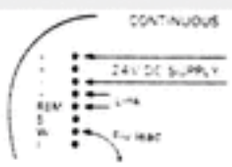
Voltage	Current (amps)*	Nominal Sound Level at 3m* is 92dBA at rated voltages of 240V AC, 120V AC, 24V DC and 50 V DC
200/250V AC (40/50 Hz)	0.03/0.04	
110/125V AC (40/50 Hz)	0.03/0.04	
24V DC	0.030	
48/50V DC	0.030	

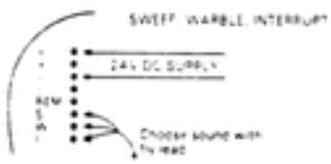
* sound level measured in non-reflective environment at 3m. Directly in front of sounders at the stated nominal voltage

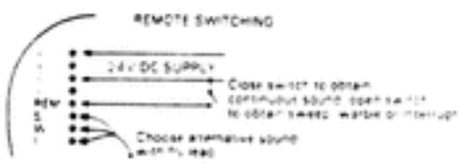


NB
1. Linking 'REM' to negative supply will always produce a continuous sound.
2. Cut link adjacent to terminal block when using 50V DC supply.
3. One 'Remote' switch may be used with several sounders.
4. Terminals for external connections
- = In and out
+ = In and out
REM remote switching of sound
*Mains terminals are fitted only to mains operated versions

24V DC SUPPLY







MAINS OPERATION

50V OPERATION

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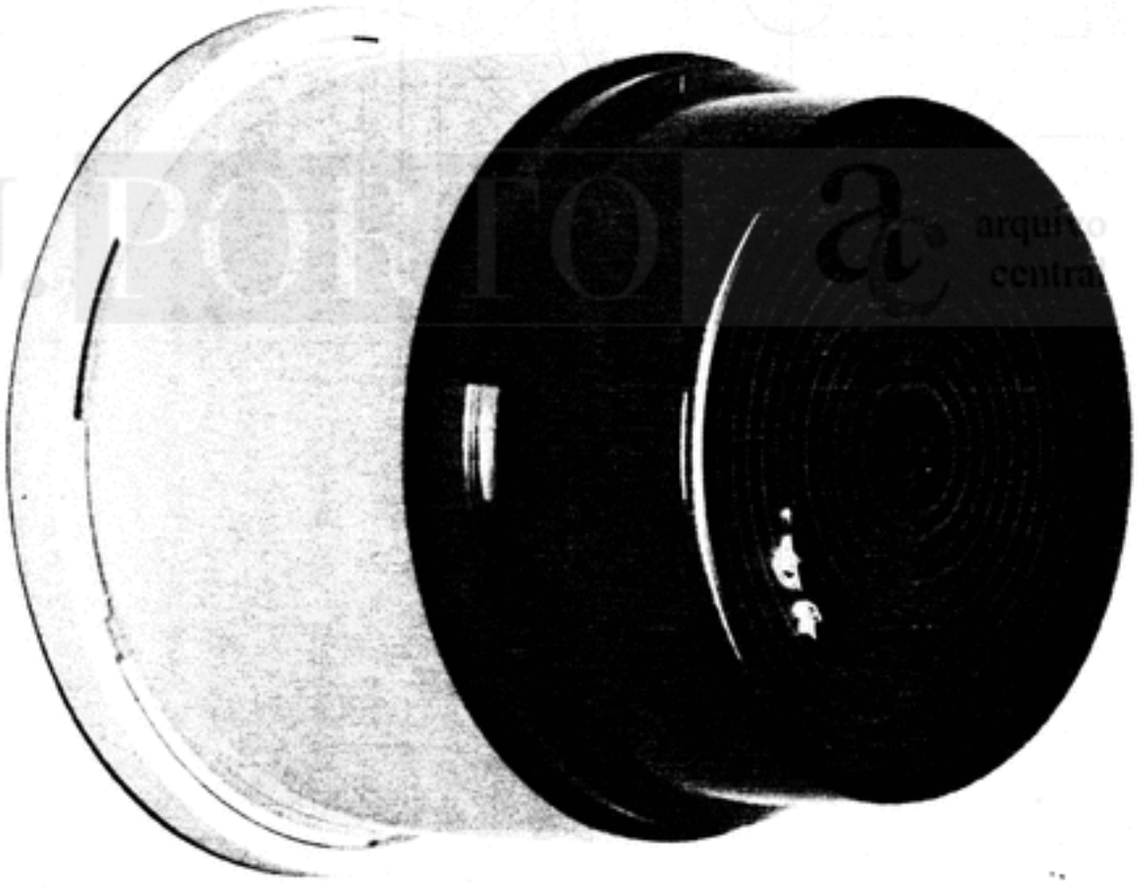
CHLORIDE GENT

2300 Xenon Warning Beacon Publication No. 1046



The Chloride Gent model 2300 Xenon warning beacon is especially suitable for inclusion in fire alarm installation where a visable warning is required. With a continuously rated and totally enclosed solid state power source, the beacon is weatherproof and is suitable for indoor or outdoor use. It is operated by a 24V DC supply, flashes at the rate of approximately 1Hz and has a low current consumption.

The model 2300 consists of a separate mounting base to which the main unit is mounted with a 'twist and lock' mechanism. The body and base are manufactured in white Polycarbonate or ABS and the unit has a red polycarbonate dome.

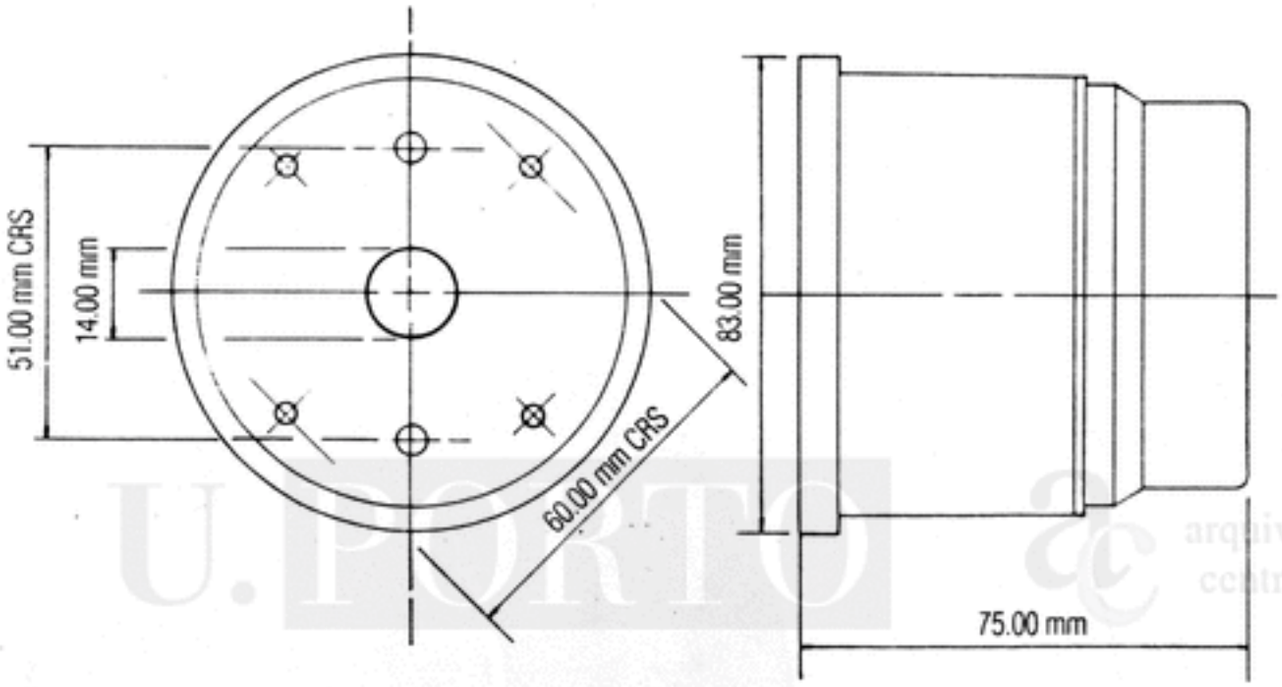
630-33

Installation

The main body is of white polycarbonate or ABS plastics material. The back plate is designed to accommodate either flush or surface wiring and a terminal block is supplied for connection to the wiring. The main body of the beacon is attached to the back plate by a bayonet type locking action.

Specification – Model 2300.

Body and Base – White Polycarbonate or ABS.
Dome – Red Polycarbonate.
Voltage – 24V DC.
Flash Rate – 1Hz approx.
Rating – Continuous.
Current Consumption at 24V DC – 125mA.
Electrical connections – Two leads Red (+) Black (–) fitted to a screened terminal block.
Installation – The snap-on detachable base has fixing holes to allow for 51mm BESA box (BS31) 60mm Switch-Box (BS4662) or direct mounting.
Weight – 200gms.
Size – Max. dia. 85mm
Length 75mm



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CHLORIDE GENT

CI/SfB (64)
UDC 654-923

Model 144F and 145 Metal Cased Bells

Chloride Gent Model 144F and 145 Metal Cased Bells are designed to give a clear, audible ring and are suitable for operation by AC and DC supplies, the bells incorporate generous-sized silver contacts and long-life armature springs.

Robustly constructed, with cast iron base and cover and heavy duty mechanisms, the bells are weather resistant and suitable for both outdoor and indoor installation.

630-21

Specification	Model 144F	Model 145
Base and cover	Cast Iron	Cast Iron
Gong	Cast Bell Metal	Cast Iron
Gong Sizes	–	102mm (4ins) dia.
	152mm (6in) dia.	152mm (6ins) dia.
	–	203mm (8ins) dia.

Wiring entries (Models 144F & 145)
Tapped 20mm conduit entry at top and sides. Fitted with blind bushes.

Terminals (Models 144F & 145)
Accommodate 2 – 1.5mm² cables

Fixing details (Models 144F & 145)
Base box drilled 50.8mm (2ins) centres.

Finish (Models 144F & 145)
Stove enamelled grey textured.

Dimensions

Model	Gong mm	Gong ins	A mm	A ins	B mm	B ins	C mm	C ins
144F	152	6	302	11.875	159	6.25	146	5.75
145 102mm (4ins)	102	4	222	8.75	121	4.75	82	3.25
152mm (6ins)	152	6	302	11.875	152	6.00	92	3.625
203mm (8ins)	203	8	352	13.875	203	8.00	117	4.625

Weight

Model	Weight kg	Weight lbs
144F	4.6	10.25
145 102mm (4ins)	2.7	6.0
152mm (6ins)	4.2	9.5
203mm (8ins)	5.2	11.5

Voltage/current consumption – AC Models

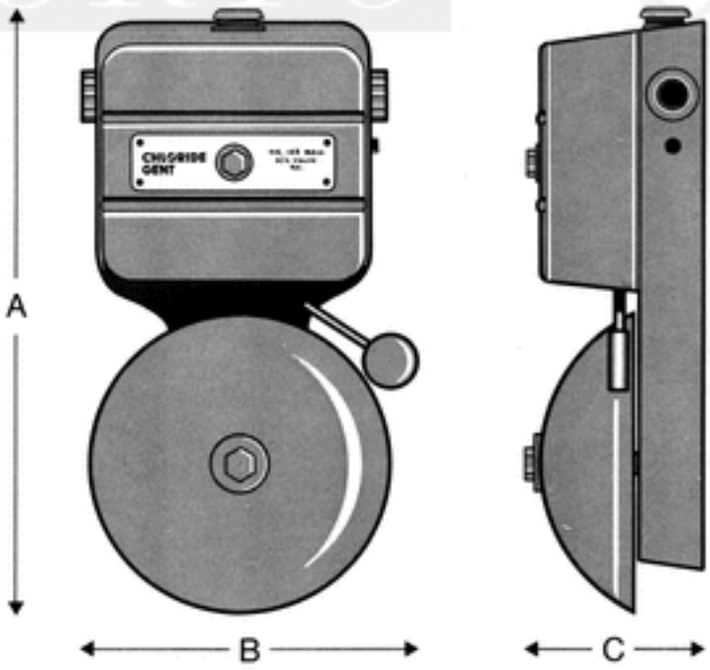
Model	Volts	VA	Amps
144F 152mm (6ins)	24 200/250	7.2 11.0/13.8	0.3 0.055
145 102mm (4ins)	24 200/250	19.2 8.10	.08 .04
152mm (6ins)	24 200/250	7.2 11.0/13.8	.3 .055
203mm (8ins)	24 200/250	14.4 16/20	.6 .08

Voltage/current consumption – DC Models

Model	Voltage	Watts	Amps
144F 152mm (6ins)	20/24	1.2/1.5	.06
145 102mm (4ins)	20/24	0.4/0.5	.02
152mm (6ins)	20/24	1.2/1.5	.06
203mm (8ins)	20/24	1.5/1.8	.075

Information required on order

1. Quantity
2. Model number
3. Gong size
4. Voltage



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630-30

CHLORIDE GENT

CI/SfB (68)
UDC 654-924

Certified Flameproof Equipment Publication 2018

Model 1086
Alarm Bell

Model 1071
Signalling Key (with latch)

The Chloride Gent Model 1071 Signalling Key, with latch, and Model 1086 Alarm Bell are designed for use in a wide variety of explosively hazardous locations. Both units are certified to Group 2 Ministry of Power specifications and are suitable for operation by AC and DC supplies.

Robustly constructed from cast iron, both the Signalling Key and the Alarm Bell incorporate seperate terminal compartments.

630 - 29

Specification	Model 1086 Alarm Bell	Model 1071 Signalling Key (with latch)
Certification standard	F.L.P. 5942 issued by the Ministry of Power certifies that this bell complies with B.S.S. of a flameproof enclosure in respect of Group 2–Petroleum and Acetone Vapours; Group 3–Town and Coke Oven Gas etc., for use with supplies from 6V to 250V DC or 6V to 440V AC N.B. This bell is not intrinsically safe and is not permitted on intrinsically safe circuits.	F.L.P. 208 issued by the Ministry of Power certifies that this signalling key is flameproof for Group 1–Mine Applications; Group2–Petroleum and Acetone Vapours on AC or DC circuits up to 250V.
Base and Cover	Cast iron with machined flanged joints Movement and terminal covers fixed by triangular-headed bolts removable only by a special key (Model 1006B)	Cast iron with machined flanged joints. Covers fixed by triangular-headed bolts removable only by a special key (Model 1006B)
Gong (6in. or 8in. diameter)	Steel	
Finish (Models 1086 and 1071)	Standard finish enamelled Mist Grey (BS.381C No. 631)	
Wiring entries	There is a single conduit entry at the left hand side of the terminal compartment. Entry may be tapped ¾in., 1in. or to suit any conduit, cable gland or conduit stopping gland approved by BASEEFA for use with Group II B or IIC enclosures.	Tapped ¾in. conduit entry fitted with packing gland at left hand side of terminal compartment. Packing gland for right hand side also available. Glands (maximum 2) for SWA cable (up to 9/16in. dia. under armour) or for PWA cable (BS 708, .0048 square inch type 60 or 61) can also be fitted.
Terminals	Housed in separate flameproof terminal compartment. Accommodates two 1.5mm² cables.	Housed in separate sealed compartment accessible without removing contact cover.

Technical details	Model 1086	Model 1071
Contact Spring	Phosphor Bronze	–
Contacts	Silver, generous sized	Single pole changeover-type
Coil	Bakelite formes, impregnated for high voltage DC.	–
Magnet	Laminated iron	
Armature	Pivoted to operate shaft and hammer at back of gong through flameproof bearing.	
Weight	22.5lbs. (10.2kg)	10lbs. (4.5kg)
Dimensions	A 425mm (16¾ins) B 197mm (7¾ins) C 95mm (3¾ins)	A 222mm (8¾ins) B 127mm (5ins) C 76mm (3ins)

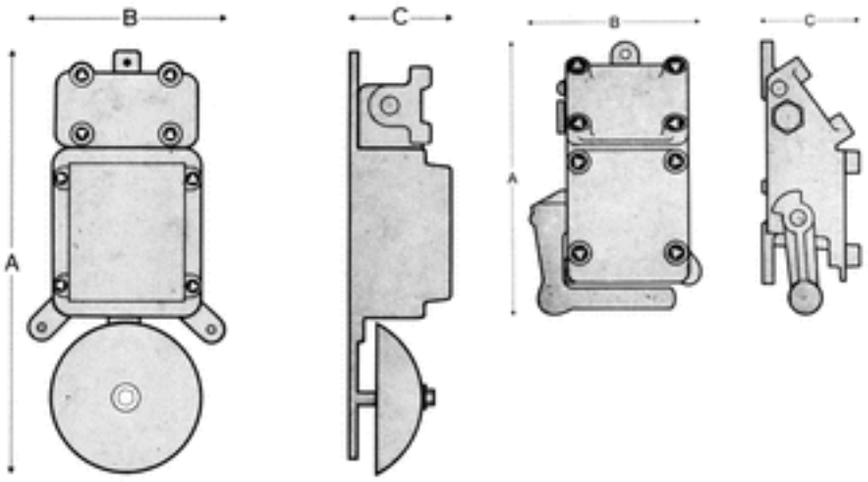
Voltage/current consumption – Model 1086

AC					DC				
12	24	50	100/125	200/250	12	24	50	100/125	200/250
	.17		.06/.08	.03/.035	.075	.045	.05		.01/.012

Also available in higher voltages up to 440V

Current capacity of contacts – Model 1071

Up to 24V DC	250V DC	Up to 250V AC
2A	0.25A	2A



Note:

One opening key (Model 1006B) is provided free with every ten units (of Model 1071 or Model 1086) or any lesser quantity. If more are required state quantity and Model Number.

Information Required on Order

1. Quantity
2. Model Number
3. Voltage and whether AC or DC (40/60 Hz for AC is assumed) – Model 1086

or

3A State what special or extra glands are required – Model 1071.

As models 1086 and 1071 are covered by Flameproof certification there can be no modifications to their specification.

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CHLORIDE GENT

4302 Magnetic Door Holder

The Unit provides a means of retaining smoke stop doors in an open position under normal condition.

They can however be automatically released by:-

1. Manually operated pushes fitted adjacent to the doors.
2. Automatic Smoke Detectors within the vicinity of the doors.
3. From a central Control Panel associated with a Fire Alarm System.

By closing specifically sited doors, lateral draughts, smoke dispersion and the speed of fire spread are all reduced and an effective 'fire stop' is provided. The holder is available for 200/250v A.C. or 24v D.C. The unit can be surface mounted or flush fixed by means of a masking plate.

Operation

The Chloride Gent 4302 Magnetic Door Holder operates with freely swinging doors, fitted with efficient door closers.

When doors are fully opened, the small door plate conveniently sited on the door surface will be held magnetically by the door holder unit.

Both the mains operated or 24v D.C. Models can either be wired directly to a smoke detecter, so that when actuated, the circuit is opened and the door will close, or when included in a fire alarm system a model 1396 Relay will break the circuit to the door closer.

Associated Equipment

Model 1396 Relay for use with 200/250v A.C. Model – The contacts of this relay are wired to the mains supply feed of the magnetic door holder in order that when the alarm sounds the relay contacts are opened and the door closes. Interruptions in the mains supply will close the doors automatically.

Specification

Voltage/Current – 200/250v A.C., 25mA. 24v D.C., 20mA.

Operating Temperature Range –10°C to +50°C

Dimensions

Door Holder

Surface – 137mm (5⅜ ins) x 72mm (3⅛ ins) x 45mm (1¾ ins) deep.

Flush – 152mm (6 ins) x 92mm (3⅝ ins) x 45mm (1¾ ins) deep.

Weight – Surface Model (including box) 0.9kg (2 lbs). Flush fixing plate 100 gms (3½ ozs).

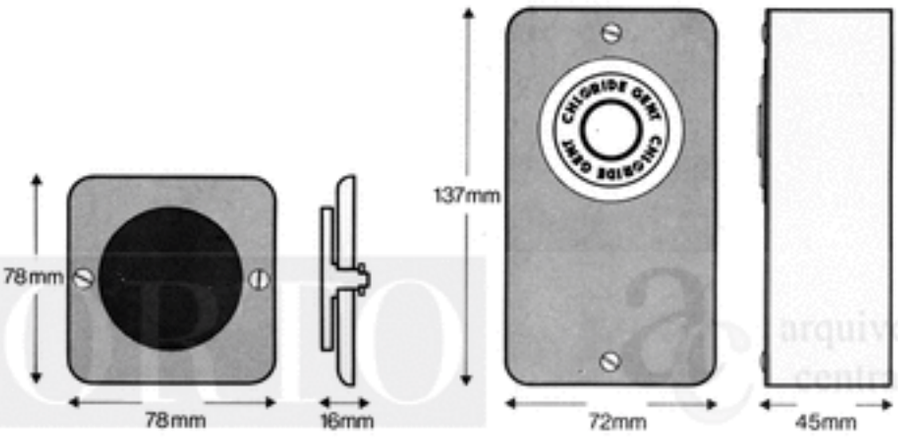
Finish – Surface model box enclosed in a high density white, polystyrene cover, front plate stove enamelled mid-grey, textured finish.

Door Plate – 78mm (3⅛ ins) x 78mm (3⅛ ins) x 16mm (⅝ ins) deep.

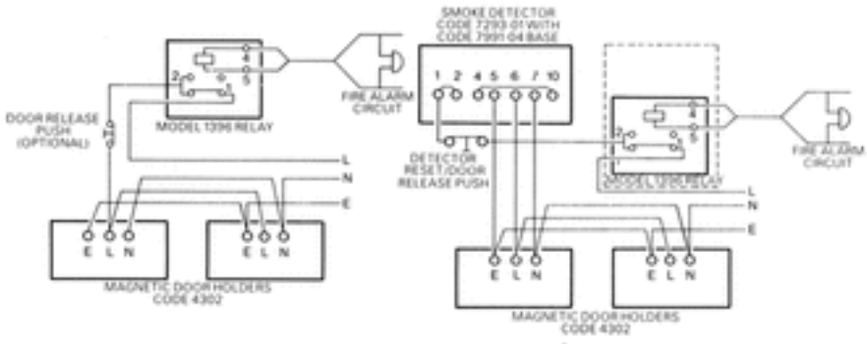
Weight – 135 gms (4¾ ozs).

Loading – Holders are capable of retaining a load of 11.25 kg (Max) (25 lbs) approximately.

Approvals – This model complies with the requirements of the Greater London Council with regard to safety and holding force.



Typical Wiring Schemes for Mains operated Magnetic Door Holders



1. Where Mains operated Magnetic Door Holders are to be used in conjunction with a fire alarm system a Model 1396 Relay is wired into the alarm circuit so that on this circuit being energised the relay contacts open the circuit to the Magnetic Door Holders.

2. A Detector and Base can be wired individually to the Magnetic Door Holders, or by adding the circuit in the dotted line, can also be operated by the alarm circuit of a fire alarm system.

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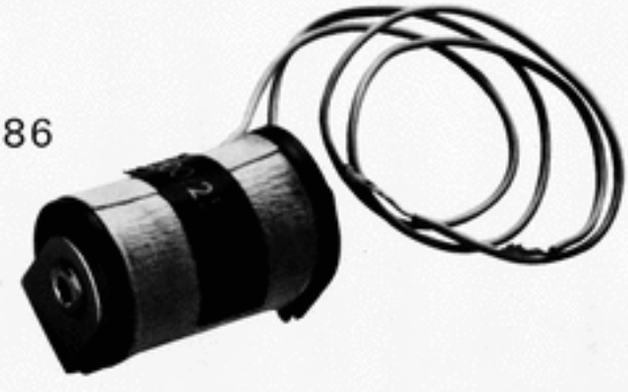
CHLORIDE GENT

CI/SfB (64)

UDC 654-923

Buzzers Publication 2019

368



386

The Chloride Gent range of Buzzers is designed to meet a wide variety of applications calling mainly for small, compact, lightweight units suitable for installation in restricted locations.

630 - 25

Specifications	Model 368	Model 386
Special features	AC models have contactless movement. Non-interference with Radio or T.V. Weather resistant.	Specially designed for mounting in equipment where an audible signal is required. Minimum order of two units.
Base and Cover	Cast iron, screwed cover. Standard finish enamelled Mist Grey. (BS 381C. No.631)	Steel parts finished-nickelled and lacquered.
Wiring entry	Tapped 20mm conduit entry at top and sides. Fitted with blind bushes.	–
Terminals	Accommodates 2–1.5mm² cables.	2 flying leads from body

Technical details	Model 368	Model 386
Coil	Bakelite former. Impregnated for high voltage DC.	Winding on an industrial-type thermo-plastic former.
Magnet	Solid pole.	–
Armature Spring	Beryllium copper	–
Contact Springs	Phosphor Bronze	–
Contacts	Silver (DC model)	–
Voltages/Current Consumption	See table	200/250V AC .016/.020 amps
Weight	4¾ lbs. (2.1kg)	2oz. (57g)

Dimensions

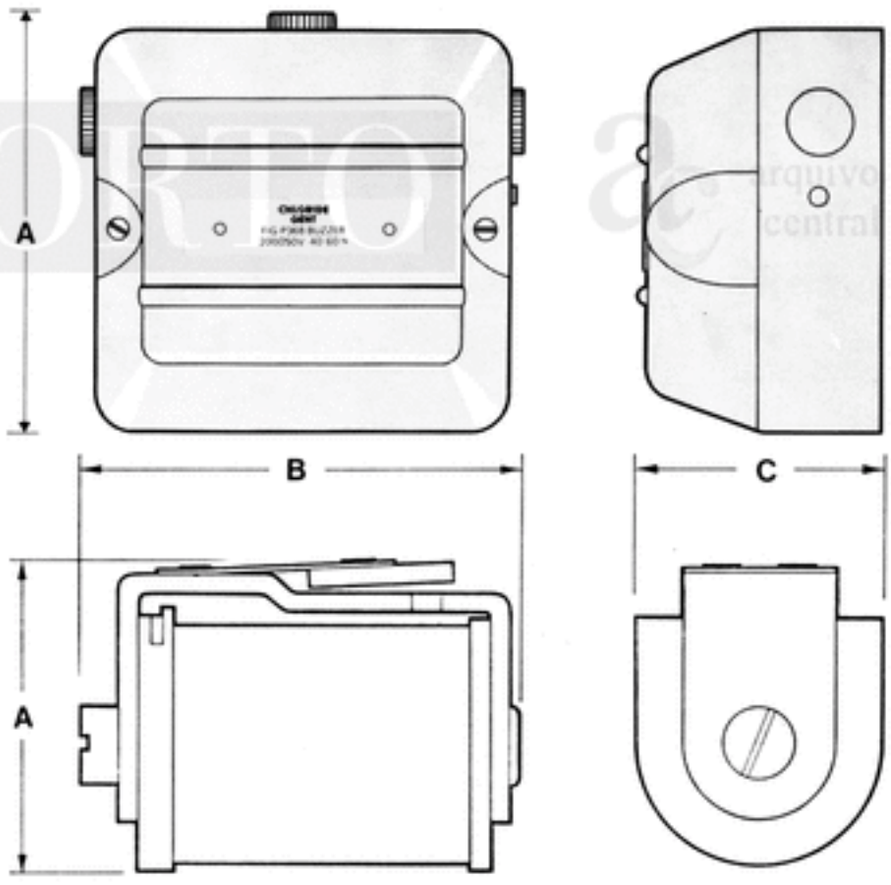
Model	A	B	C
368	130mm (5⅛ins)	140mm (5½ins)	78mm (3⅛ins)
386	25mm (1ins)	37mm (1⅜ins)	21mm (⅞ins)

Voltage/current consumption tables Model 368

	AC				DC				
Voltage	12	24	100/125	200/250	12	24	50	100/125	200/250
amps	.28	.14	.075/.1	.045/.058	.03	.022	.045	.065/.08	.038/.045

Information Required on Order

1. Quantity (not less than two for Model 386)
2. Model Number
3. Voltage (and whether AC or DC for Model 368–40/60Hz for AC is assumed)



CHLORIDE GENT

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Publication 2019 July 1979

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CHLORIDE GENT

Cl/SfB (64)

UDC 681.113

C157 Constant Potential Charger Publication 5002

This charger is for use in conjunction with secondary batteries having either lead acid or nickel cadmium cells. It has been designed to maintain them fully charged and at a predetermined constant potential by means of a solid state voltage sensing circuit which regulates precisely the flow of current into the battery regardless of the state of the battery. A current limiting circuit is included to minimise damage due to any overload. Electrolyte loss is negligible reducing maintenance to a minimum. The front plate incorporates a voltmeter for indicating the state of charge of the battery, a mains continuity indicating neon light, and load and mains fuses.

Where a standby supply is not essential this unit can provide a nominal 24 VDC or 48 VDC supply without batteries where a reliable AC supply is available and providing the maximum load current is not in excess of 1 amp on 24V or 0.5 amps on 48V. The unit is housed in a sheet steel case with two 20mm clear conduit entries. It is suitable for wall or shelf mounting.

Specification

Mains Input 200/250 volts 40/60Hz.

Models are available for the following batteries –

Model C157/24 nominal 24v lead acid consisting of 12 cells or nickel cadmium consisting of 20 cells.

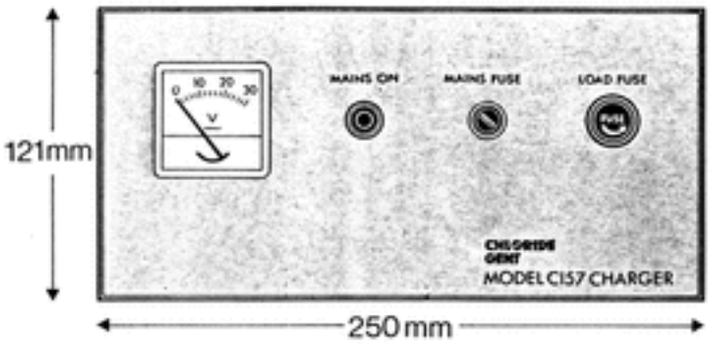
Model C157/48 nominal 48v lead acid consisting of 24 cells or nickel cadmium consisting of 38 cells.

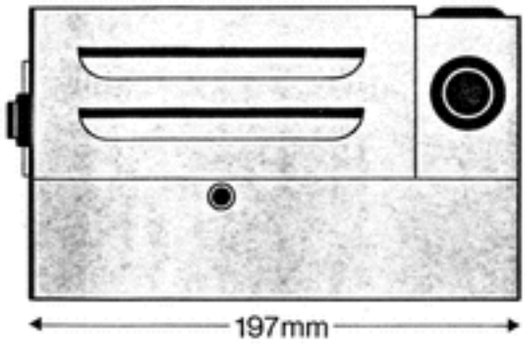
Output

Current output nominal 24v units – 1 amp.

Current output nominal 48v units – 0·5 amps.

Height	Width
121mm(4¾ins)	250mm (9⅞ins)
Depth	Weight
197mm(7¾ins)	4·2kg (9¼lbs)





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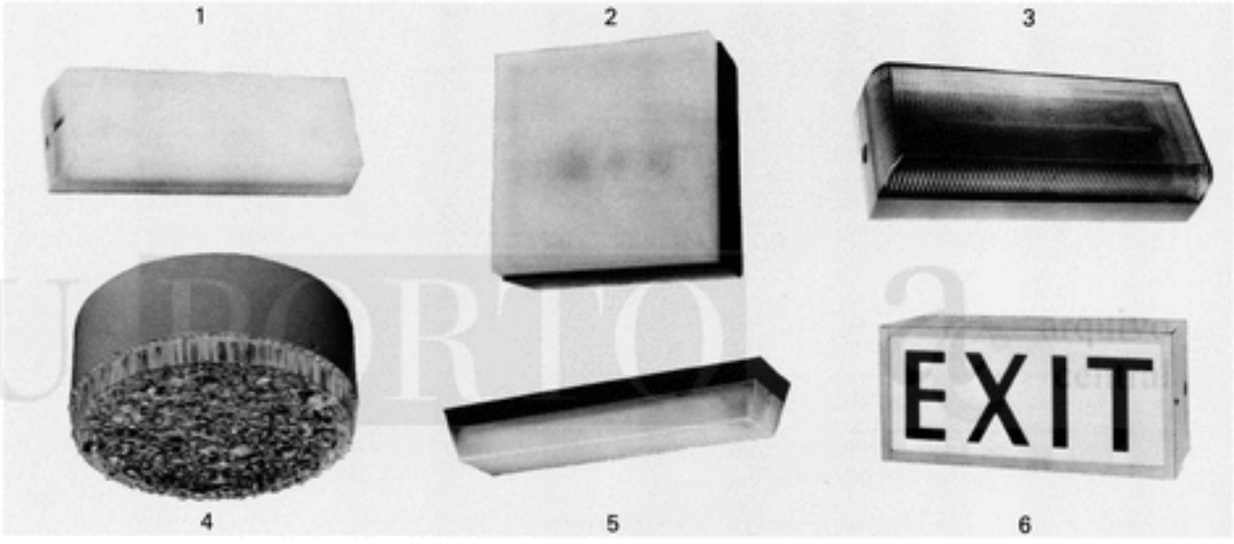
CHLORIDE GENT

Emergency Lighting Units Publication 8011



1
VANDAL RESISTANT RANGE
A range of IP65 weather proof and vandal resistant emergency lighting units styled to fit unobtrusively into any background. They are suitable for exterior or interior use and can be wall or ceiling mounted. Illumination is by 12" 8W fluorescent tube. Units are available in the following versions – Non-Maintained, codes 3376-01 and 3396-01 – Maintained, codes 3376-02 and 3396-02, and as ICEL certified units, codes 3366-01 and 3386-01. Slave luminaires for use with central battery systems are also available.

2
GENERAL PURPOSE RANGE
These self-contained units are simple in styling and are suitable for many interior applications. They can be wall or ceiling mounted. In this range of low-cost units illumination is by either incandescent lamps or a 6" 4W miniature fluorescent tube.
Non-Maintained versions are available, codes 3373-01, 3383-01, 3393-01 and 3394-01.

3
PRISMATIC RANGE
A range of emergency lighting units specially designed to optimise the light available when used in installations to BS5266 Part 1. The units are suitable for interior use and will blend with all types of decor. The transparent, self-extinguishing diffuser has high light transmission properties and illumination is by 12" 8W fluorescent tube or incandescent lamps. Units are available in the following versions – Non-Maintained, codes 3375-01, 3395-01 and 3395-04 – Maintained codes, 3375-02, 3395-02, 3395-04 and as ICEL approved units, code 3365-01 and 3385-01. Slave luminaires for use with central battery systems are also available.

4
DECORATIVE RANGE
These attractively styled circular luminaires are ideally suited for all interior applications where an elegant but discreet emergency lighting fitting is required. They have a bubble pattern glass diffuser and illumination is by incandescent lamps or 6" 4W miniature fluorescent tube. They can be either wall or ceiling mounted. Non-Maintained units are available, codes 3369-01, 3379-01, 3389-01 and 3399-01.

5
HEAVY DUTY WEATHER RESISTANT RANGE
A range of exceptionally tough, heavy-duty, vandal resistant, weatherproof emergency lighting units. They can be used internally or externally and can be wall or ceiling mounted. Illumination is by fluorescent tube. The diffuser is made from self-extinguishing polycarbonate and is fixed to the diecast base with vandal-resistant screws. Units are available in the following versions – Non-Maintained, code 3391-01 and sustained, code 3391-03.

6
EXIT RANGE
An extensive range of standard EXIT signs for all kinds of application. The units are suitable for identifying escape doors and routes as recommended in BS5266 Part 1. The EXIT box is constructed generally to BS2560 and is stove enamelled light grey to BS381C (shade 631). The front panel is made of self-extinguishing material and an opal panel is fitted in the base to illuminate the threshold of the door. Illumination is by fluorescent tube or incandescent lamps.
Double sided versions can be supplied. The units are available in the following versions – Non-Maintained, codes 3377-01, 3397-01 and 3397-04. Maintained, codes 3377-02, 3397-02, 3395-02, 3397-04 and 3398-04. Sustained codes, 3397-03, 3398-03. Slave luminaires for use with central battery systems are also available.

Description of Emergency Lighting Duties

Non-Maintained Lighting
A lighting system in which all emergency lighting lamps are in operation only when the normal lighting fails.

Maintained Lighting
A lighting system in which all emergency lighting lamps are energised at all times. When the mains fails the standby battery supply takes over immediately and energises the lamps for the specified duration.

Sustained Lighting
An emergency lighting luminaire containing two (or more) lamps, one of which is energised from the normal lighting supply and another which is energised from a standby battery supply. A luminare of this type is intended to sustain illumination at all times.

VANDAL RESISTANT RANGE

Specification
The Unit has a sealed sintered nickel cadmium battery, a constant current charger, a silicon transistor inverter and a solid state changeover circuit mounted on a hinged gear tray. In the event of a mains failure the 12" 8W miniature fluorescent tube provides instant emergency lighting for the specified duration. (Or until the mains supply is restored.)

Maintained versions can be used for normal or emergency lighting, having the facility for single or bank remote switching of the mains lighting circuit. When the normal lighting is off the unit will still operate as a non-maintained type.

The unit is mounted in a diecast housing, painted grey to BS4800 (shade 10A03) with a self-extinguishing diffuser of opal polycarbonate. The diffuser is fixed to the base by vandal-resistant screws.

A mains 'healthy' light emitting diode indicator is provided.

Protection
Safety protection is provided by a short circuit-proof mains transformer. In addition the maintained versions are fitted with a 500mA. replaceable fuse.

Installation
Rear BS conduit box entry facility with ¾" (20mm) conduit entries at either end.

Optional Extras
Test button simulating mains failure. Optional legends (EXIT, EMERGENCY EXIT, etc. with or without arrows) to order. Non-standard mains inputs to order.

Technical

Model	3376-01	3396-01	3376-02	3396-02
Duty	Non-maintained		Maintained	
Duration	1 hour	3 hours	1 hour	3 hours
Supply voltage	240 volts – 6% 50Hz			
Power consumption	8VA		8.45VA	
Lamp	1 × 12" 8W fluorescent			
Dimensions L W D	16" (400mm) 5¼" (135mm) 4" (102mm)			
Weight (approx)	5lbs (2.27kg)	6lbs (2.72kg)	7¼lbs (3.29kg)	8¼lbs (3.75kg)
Operating ambients	5°C to 35°C		5°C to 30°C	

The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

GENERAL PURPOSE RANGE

Specification
The unit has a sealed sintered nickel cadmium battery, a constant current charger, a silicon transistor inverter (3394-01 only) and a solid state changeover circuit. In the event of mains failure the lamp provides instant emergency lighting for the specified duration. (Or until the mains supply is restored).

The unit is mounted in a plastic case with a clip-on opal diffuser made of self-extinguishing material. A light emitting diode indicates that the mains is healthy and that the charger is functioning.

Protection
Safety protection is provided by a 100mA. cartridge fuse. Fluorescent models are protected by a short circuit-proof mains transformer.

Installation
BS Conduit entry facility provided on base.

Optional Extras
Test button simulating mains failure. Optional legends (EXIT, FIRE EXIT, etc., with or without arrows) to order. Non-standard mains input.

Technical

Model	3373-01	3383-01	3393-01	3394-01
Duty	Non-maintained			
Min. duration after 24 hr. recharge	1 hour		3 hours	
Supply voltage	240V – 6% 50/60Hz			
Power consumption (max)	8VA			
Light ouput (nom)	28 L		50 L	80 L
Lamps	1 × 2.4W high efficiency tungsten krypton filled		2 × 2.2W high efficiency tungsten krypton filled	1 × 6in 4W fluorescent tube
Dimensions	7" square 3" deep (178mm × 178mm × 76mm)			
Weight (approx)	3lb (1.3kg)	3½lb (1.6kg)		
Operating ambients	5°C to 35°C			

The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

PRISMATIC RANGE

Specification
The unit has a sealed sintered nickel cadmium battery, a constant current charger, a silicon transistor inverter (fluorescent models) and a solid state changeover switch mounted on a hinged gear tray. In the event of a mains failure emergency lighting is provided for the specified duration. (Or until the mains supply is restored.) Maintained versions can be used for normal or emergency lighting, having the facility for single or bank remote switching of the normal lighting circuit. When the normal lighting is off the unit will still operate as a non-maintained type.

The case is moulded from flame retardant plastic, the base being white and the transparent diffuser having high light transmission properties.

A mains 'healthy' light emitting diode indicator is fitted.

Protection
A short circuit-proof mains transformer is fitted. Maintained versions are also fitted with a 500mA. replaceable fuse. Tungsten versions have a cartridge fuse.

Installation
Rear BS conduit box entry facility with ¾" (20mm) conduit entries at either end.

Optional Extras
Test button simulating mains failure. Optional legends (EXIT, EMERGENCY EXIT, etc. with or without arrow) to order. Non-standard mains inputs to order.

Technical

Model	3375-01	3395-01	3375-02	3395-02	3395-04
Duty	Non-maintained		Maintained		Maintained Non-maintained
Min. duration after 24 hour recharge	1 hours	3 hours	1 hour	3 hours	
Supply voltage	240 volts – 6% 50Hz				
Power consumption (max)	8VA		8.50VA		15VA
Light output (nominal)	200L				20L
Lamp	12" 8W				2 × 2.5V 0.5A tungsten
Dimensions L W D	16" (408mm) 6 5/16" (159mm) 4" (102mm)				
Weight	5¾lbs (2.6kg)	6½lbs (3kg)	7 lbs (3.2kg)	7¾lbs (3.6kg)	7lbs (3.2kg)
Operating ambients	5°C to 35°C		5° to 30°C		

The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

DECORATIVE RANGE

Specification
The unit has a sealed sintered nickel cadmium battery, a constant current charger, a silicon transistor inverter (3369-01 only) and a solid state changeover circuit. In the event of mains failure, the lamp provides instant emergency lighting for the specified duration. (Or until the mains supply is restored).

The unit is mounted in an aluminium case and the patterned glass diffuser is simply screwed on. A light emitting diode indicates that the mains is healthy and that the charger is functioning.

Protection
Safety protection is provided by a 100mA. cartridge fuse. Fluorescent models are protected by a short circuit-proof mains transformer.

Installation
Rear BS conduit box entry facility.

Optional Extras
Test button simulating mains failure. Non-standard mains input to order.

Technical

Model	3379-01	3389-01	3399-01	3369-01
Duty	Non-maintained			
Min. duration after 24hr recharge	1 hour	3 hours		
Supply voltage	240V – 6% 50/60Hz			
Power consumption (max)	8VA			
Lamps	1 × 2.4W high efficiency tungsten krypton filled		2 × 2.2W high eff. tungsten krypton filled	1 × 6" 4W fluorescent tube
Dimensions	9⅜" dia × 4" deep (238mm dia × 102mm)			
Weight	7lbs (3.2kg)	7½lbs (3.4kg)	7½lbs (3.4kg)	7½lbs (3.4kg)
Operating ambients	5°C to 35°C			

The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

NON-MAINTAINED SINGLE BULB TUNGSTEN LUMINAIRES

General Purpose (3373-01 & 3383-01)

Mounting Height	Distance To Wall	Spacing
2	1.85	5.2
2.5	1.75	5.2
3	1.5	5.3
4	–	4.7
5	–	2.8

All measurements in metres

Decorative (glass diffuser) (3379-01 & 3389-01)

Mounting Height	Distance To Wall	Spacing
2	1.9	5.3
2.5	1.8	5.5
3	1.8	5.4
4	0.85	5.2
5	–	4.0
6	–	1.9

All measurements in metres

NON-MAINTAINED 4w FLUORESCENT LUMINARIES

General purpose (3394-01)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	3.0	7.6	7.6	7.6	3.0
2.5	3.1	8.2	8.2	8.2	3.1
3	3.2	8.6	8.6	8.6	3.2
4	3.2	9.0	9.0	9.0	3.2
5	2.6	9.0	9.0	9.0	2.6
6	1.7	8.6	8.6	8.6	1.7
7	–	7.5	7.5	7.5	–
8	–	6.2	6.2	6.2	–
9	–	3.0	3.0	3.0	–
10	–	–	–	–	–

All measurements in metres

Decorative (glass diffuser) (3369-01)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	3.7	10.4	9.5	5.6	3.6
2.5	4.0	10.7	9.8	9.0	3.7
3	4.1	10.8	10.2	9.6	3.98
4	4.4	11.8	11.4	11.0	4.1
5	4.5	12.3	11.9	11.5	4.3
6	4.5	12.8	12.4	12.0	4.2
7	4.3	13.0	12.6	12.2	4.0
8	3.7	13.0	12.5	12.0	3.2
9	2.7	12.9	12.3	11.7	2.0
10	0.5	12.5	11.8	11.0	–

All measurements in metres

TWIN BULB TUNGSTEN LUMINAIRES

General Purpose (3393-01)

Mounting Height	Distance To Wall	Spacing
2	2.6	6.8
2.5	2.7	7.2
3	2.75	7.5
4	2.3	7.5
5	1.0	7.0
6	–	5.0
7	–	4.0
8	–	–

All measurements in metres

Decorative (glass diffuser) (3399-01)

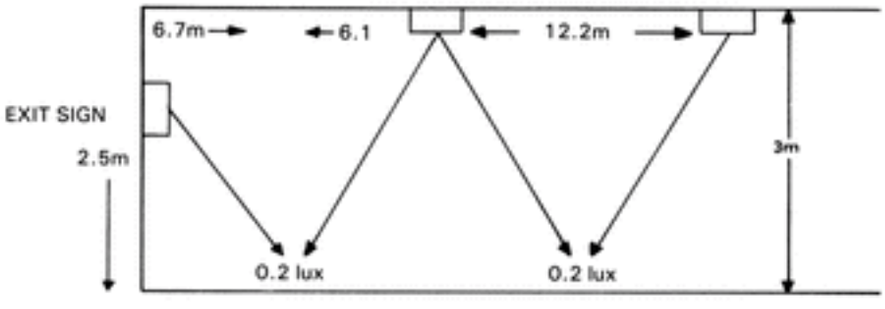
Mounting Height	Distance To Wall	Spacing
2	2.7	7.0
2.5	2.8	7.4
3	2.8	7.6
4	2.6	8.1
5	2.1	8.4
6	1.0	7.5
7	–	6.2
8	–	4.1

All measurements in metres

EXIT SIGNS (3377-01, 3377-02, 3397-01 & 3397-02)

EXIT Signs Mounting Height	Distance To 0.1 Lux
2	6.4
2.25	6.5
2.5	6.7
3	7.1
3.5	7.2
4	7.2

All measurements in metres



To obtain distance coverage to 0.2 Lux: Add the distance coverage to 0.1 Lux from the exit sign to the distance coverage to 0.1 Lux from the ceiling mounted luminaires (obtained by halving typical spacing to 0.2 Lux).

Note: Exit sign mounting height and ceiling height will normally be different.

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EXIT RANGE

Specification
The unit has a sealed sintered nickel cadmium battery, a constant current charger; a silicon transistor inverter (fluorescent models) and a solid state changeover circuit mounted on a hinged gear tray. In the event of mains failure instant emergency lighting is provided for the specified duration. (Or until the mains supply is restored.)

The unit is mounted in an EXIT box constructed generally to British Standard specification BS2560 and is stove enamelled grey to BS381C (shade 631). The front plate is of self-extinguishing material. An opal plate is fitted in the base to illuminate the threshold of the door.

Double sided versions are also available.

A mains 'healthy' light emitting diode indicator is provided.

Protection
A short circuit-proof mains transformer is fitted. Maintained versions are also fitted with a 500mA. replaceable fuse. Tungsten versions have a cartridge fuse.

Installation
Rear BS conduit box entry facility.

Optional Extras
Test button simulating mains failure. Legend to order with or without directional arrows. Non-standard mains inputs to order. Stencilled metal legend screens for theatre use.

Technical

Model	3377-01	3397-01	3397-03	3377-02	3397-02	3397-04
Duty	Non-maintained		Sustained	Maintained		Maintained or non-maintained
Min. duration after 24 hour recharge	1 hour	3 hours	3 hours	1 hour	3 hours	3 hours
Supply voltage	240V – 6% 50Hz					
Power consumption (max)	8VA			8VA/45VA		15VA
Weight (approx)	9½lbs (4.3kg)	10¼lbs (4.6kg)	11¼lbs (5.1kg)	10½lbs (4.8kg)	11¼lbs (5.1kg)	10lbs (4.5kg)
Dimensions L W D	16½" (419mm) 7½" (190mm) 4½" (114mm)					
Operating ambients	5°C to 35°C		5°C to 30°C			

The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

HEAVY DUTY WEATHER RESISTANT RANGE

Specification
The unit has a sealed sintered nickel cadmium battery, a constant current charger, a silicon transistor inverter and a solid state changeover circuit. In the event of mains failure, the miniature fluorescent tube provides instant emergency lighting for the specified duration.

The unit is mounted in a diecast aluminium alloy housing. The self-extinguishing polycarbonate diffuser is fixed to the base by vandal-resistant screws.

A mains 'healthy' indicator neon is provided.

Protection
Safety protection is provided by a short circuit proof-mains transformer. In addition the sustained models are protected by a 750mA 1" HRC fuse.

Installation
The mains circuitry in sustained models is protected by a 750mA 1" HRC fuse. Rear BS conduit box entry or suitable for direct mounting.

Optional Extras
Test button simulating mains failure. Optional legends (EXIT, EMERGENCY EXIT etc., with or without arrows) to order. Non-standard mains inputs.

Technical

Model	3391-01	3391-03
Duty	Non-maintained	Sustained
Min. duration after 24 hr. recharge	3 hours	3 hours
Supply voltage	240 volts±6% 50/60Hz	240 volts±6% 50Hz
Power consumption (max)	8VA	8/45VA
Light output (nom) Emergency	250 L	250 L
Lamps (Emergency) (Mains)	21" 13W —	21" 13W 21" 13W
Dimensions L W D	23¾" (603mm) 5¼" (133mm) 3¾" (95mm)	23¾" (603mm) 5¼" (133mm) 3¾" (95mm)
Weight (approx)	11¾lb (5.3kg)	12½lb (5.7kg)
Operating ambients	5°C to 35°C	5°C to 30°C

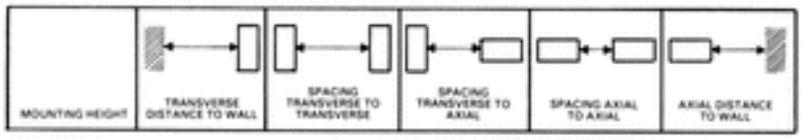
The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

Positioning of self-contained emergency lights

Requirements
When the normal lighting of occupied premises fails, escape lighting is required to fulfill the following functions:
(a) to indicate clearly and unambiguously the escape routes;
(b) to provide illumination along such routes to allow safe movement towards and through the exits provided;
(c) to ensure that fire alarm call points and fire fighting equipment provided along escape routes can be readily located.

Positioning of Luminaires
1. An escape lighting luminaire should be sited near each exit door and emergency exit door and at points where it is necessary to emphasize the position of potential hazards e.g.
(a) near each intersection of corridors;
(b) near each change of direction (other than on a staircase);
(c) near each staircase so that each flight of stairs receives direct light;
(d) near any other changes of floor level which may constitute a hazard;
(e) outside each final exit and close to it.
2. Additional luminaires as required, should be sited so as to ensure that the lighting throughout the escape routes complies with the recommendations of minimum illuminance of 0.2 lux. Spacing of luminaires should be checked against the light level tables. Where these exceed the maximum spacing stated, additional luminaires should be used.
3. All fire alarm call points and fire fighting equipment along escape routes should be adequately illuminated. If not, luminaire positions should be adjusted or additional luminaires used. All passenger lift cars should have a self-contained emergency light. Toilets exceeding 8 square metres should be illuminated to 0.2 lux min. Luminaires should be sited to illuminate all other areas designated by legislation, the enforcing authority or the customer which are not already covered.

To determine spacings for the luminaire required, simply check the mounting height required in the tables. In the case of fluorescent units the terms 'axial' and 'transverse' are used to describe the orientation of the fluorescent lamp, as follows:
All measurements are in metres for spacing to an illuminance of 0.2 lux at floor level.
The luminaire spacing data in this publication is derived by computer analysis of photometric data obtained from comprehensive laboratory tests conducted according to recognised standards.
The data is based on the end-of-discharge voltage of the battery, minimum reflectance from surrounding surfaces and performance of aged lamps.



8w FLUORESCENT LUMINARIES

Vandal Resistant non-maintained (3376-01 & 3396-01)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	5.0	12.4	10.7	9.0	3.6
2.5	5.2	13.7	11.7	9.8	4.0
3	5.5	14.1	12.4	10.6	4.3
4	5.7	15.0	13.4	11.8	4.6
5	5.7	16.0	14.4	12.8	4.7
6	5.6	15.9	14.6	13.3	4.7
7	5.3	16.1	14.8	13.5	4.4
8	4.8	16.0	14.7	13.4	3.7
9	3.8	15.6	14.4	13.1	2.7
10	2.3	15.1	13.8	12.5	0.7

All measurements in metres

Vandal Resistant maintained (3376-02 & 3396-02)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	4.9	13.0	11.2	9.4	3.7
2.5	5.3	13.7	12.0	10.2	4.0
3	5.4	14.1	14.0	10.8	4.2
4	5.7	15.7	14.0	12.3	4.7
5	5.9	16.0	14.6	13.2	4.8
6	5.7	16.5	15.1	13.8	4.8
7	5.6	16.6	15.3	14.0	4.7
8	5.2	16.5	15.2	13.9	4.2
9	4.2	16.2	14.8	13.5	3.6
10	2.8	16.2	14.8	13.5	2.4

All measurements in metres

Prismatic non-maintained (3375-01 & 3395-01)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	6.04	15.48	12.23	8.98	3.66
2.5	6.36	16.36	13.09	9.82	4.0
3	6.43	17.42	14.02	10.61	4.28
4	6.28	17.96	14.91	11.86	4.69
5	5.96	17.68	15.24	12.8	4.83
6	6.00	17.47	15.41	13.34	4.78
7	5.87	16.68	15.25	13.52	4.72
8	5.6	17.16	15.41	13.66	4.25
9	5.2	16.78	15.05	13.32	3.82
10	4.45	16.49	14.87	13.24	2.78

All measurements in metres

Prismatic maintained (3375-02 & 3395-02)

Mounting Height	Transverse Distance To Wall	Spacing Transverse/ Transverse	Spacing Transverse/ Axial	Spacing Axial/ Axial	Axial Distance To Wall
2	5.6	13.94	11.26	8.85	3.51
2.5	5.62	14.96	12.18	9.40	3.80
3	5.64	15.64	12.81	9.98	4.06
4	5.5	15.7	13.56	11.42	4.37
5	5.36	15.7	13.81	11.92	4.43
6	5.22	15.08	13.76	12.44	4.36
7	5.09	15.0	13.8	12.6	4.21
8	4.62	14.92	13.71	12.5	3.65
9	3.73	14.58	13.36	12.14	2.84
10	2.22	14.27	13.03	11.78	0.35

All measurements in metres

CHLORIDE GENT

3382-02 Emergency Light Conversion Kit Publication 8015

The 3382-02 is designed to convert standard 20W to 125W fluorescent luminaires into maintained emergency lighting luminaires. The inverter/change-over unit may be fitted within the spine of the luminaire or remotely. The power pack and charger may be ceiling mounted, concealed within a false ceiling or in the case of larger modular luminaires fitted inside the luminaire.

The conversion kit can be used for all the same applications as the existing range of luminaires. However a very high level of light is achieved with this product and consequently the number employed can be reduced compared with miniature fluorescent lamps to cover the same area.

The 3382-02 also offers the user the choice of incorporating the emergency lighting facility in mains style fittings, employing the same lamp source, without the need for additional 'miniature fittings'. An ideal application which is currently being used extensively is in shops, department and multiple stores to cover security, stand by and emergency requirements. This product may also be used as a small local central system to provide one hour standby for up to 5 luminaires suitable for cold stores, specific high security areas etc.

630 - 17

3382-02 Emergency Light Conversion Kit

Technical Specification

Operation

Maintained. The fluorescent tube is normally powered by the existing starter and ballast. Battery on automatic charge. Unit automatically switches to the battery and inverter when supply is interrupted. A solid state circuit automatically switches the inverter off when the battery is discharged.

Lamp type

Suitable for standard fluorescent lamps from 20 to 125 watts.

Rating

Unit switchable to provide either high light output or long duration

Recharge

24 hours for rated duration.

Charger

Two rate hysteresis current with low voltage cut off and temperature compensation.

Battery

24 volt Cyclon sealed lead acid.

Light output

Approx. 1000 lumens on 65 watt daylight (5ft) lamp.

Changeover voltage

The unit will change from A.C. supply to battery supply between 60% and 85% of normal A.C. voltage (BS 764).

Input

110/240V 50/60Hz.

Protection

Fuse protected.

Environment

Consult Chloride Gent if temperature exceeds 35°C or humidity exceeds 50% or in environments with chemical contamination.

Performance

The equipment features a high/low level output option which can be selected according to the application requirements. The performance figures given below for guidance are measured at a temperature of 25°C (77°F).

Tube	20W	40W	65/80W	75/85W	125W
Mains lumens	110	2750	4700	6300	8700
High light output lumens	464	910	1095	1550	1470
Current drain (MA)	855	1075	1225	1270	1510
Duration	2½hrs	2hrs	1½hrs	1hr	1hr
Long duration lumens	329	588	627	–	–
Current drain (MA)	500	645	735	–	–
Duration	4hrs	3hrs	3hrs	–	–

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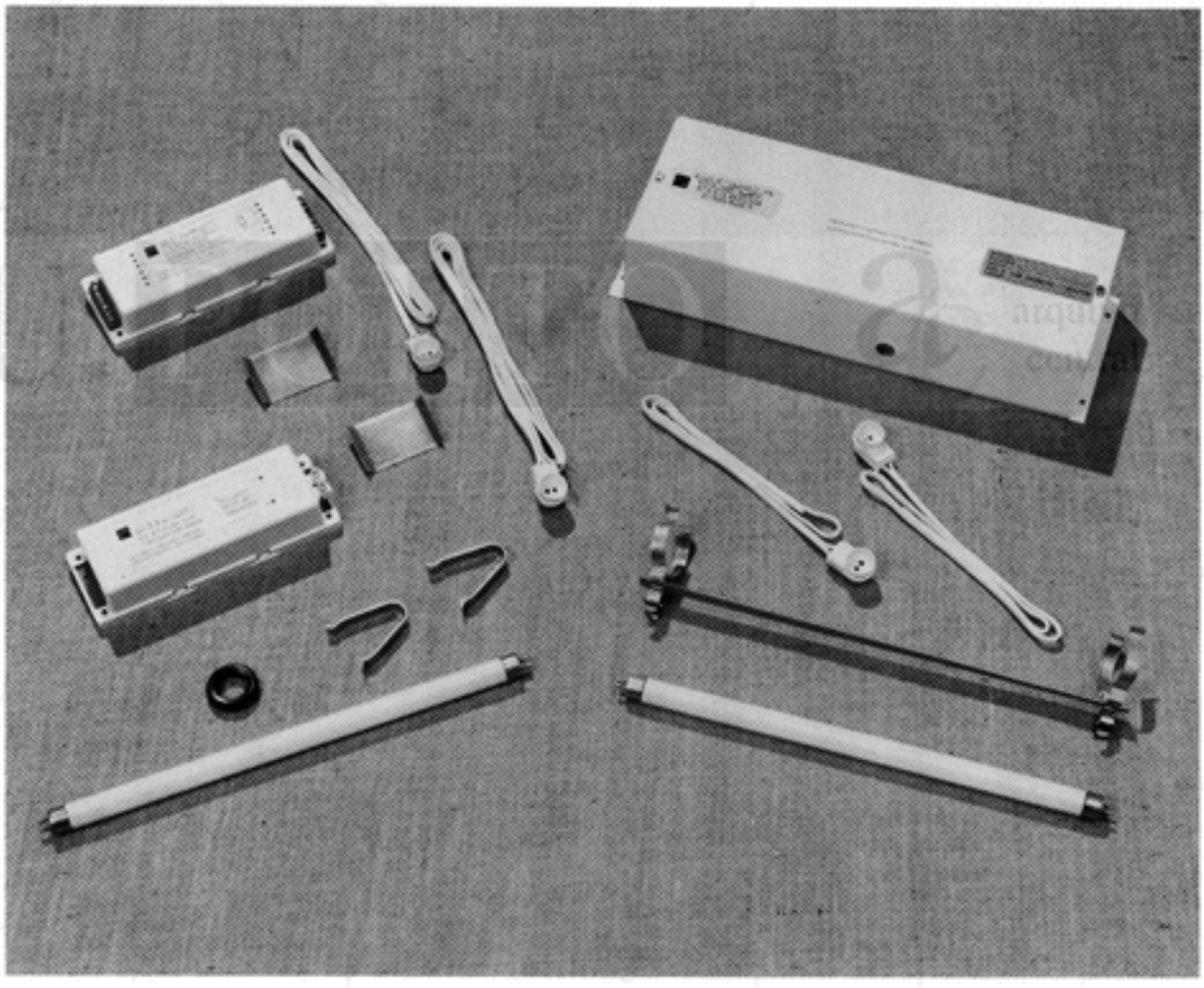
CHLORIDE GENT

CI/SfB (63.8)

3372-01 and 3392-01 Emergency Lighting Kits Publication No 8016



3372-01

An emergency lighting kit designed to convert a mains fitting to an emergency luminaire. The kit is approved to Post Office Specifications.

3392-01

An emergency lighting kit designed for installation in ceiling voids or in concealed locations. The unit will also convert a mains fitting.

630-15

Code 3372-01 and 3392-01 Emergency Lighting Kits

Specification

The kits are powered by a sealed sintered nickel cadmium battery with a constant current charger, a silicon transistor inverter and a solid state changeover circuit.

Technical

Model	3372-01	3392-01
Duty	Non-Maintained	
Duration	1 hour	3 hours
Supply voltage	240V ± 6%, 50 Hz.	
Lamp	1 × 12" 8W Fluorescent	
Dimensions L	160mm (6¼")	305mm (12")
H	2 Packs 36mm (1½")	52mm (2")
W	55mm (2¼")	84mm (3½")
Operating ambient	5°C to 35°C	

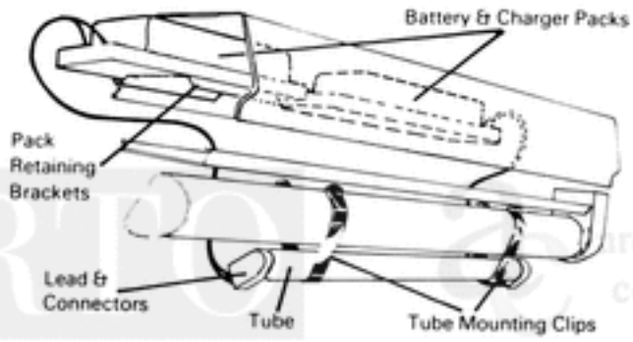
The data in this table refers to operation from a 240V 50Hz supply and an ambient temperature of 20°C. The manufacturer should be consulted if other supply voltages or frequencies are required or if units are required to operate outside the ambient temperatures or in a corrosive or humid atmosphere.

Installation

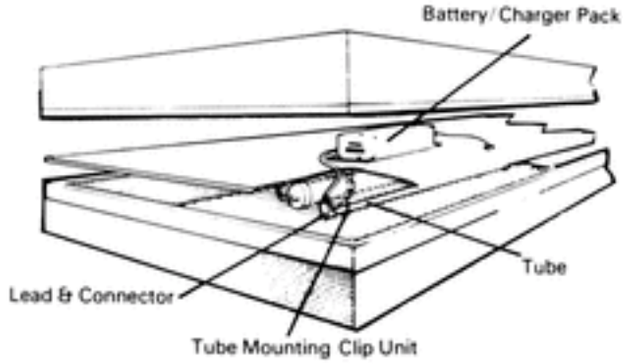
Installation

These units can be installed in suitable mains fluorescent fittings or alternatively in ceiling voids or behind pelmets. **IT IS IMPORTANT TO ENSURE THAT THE EQUIPMENT IS INSTALLED REMOTE FROM OTHER HEAT SOURCES.** If in doubt please contact our Technical Staff.

KIT 3372-01



KIT 3392-01



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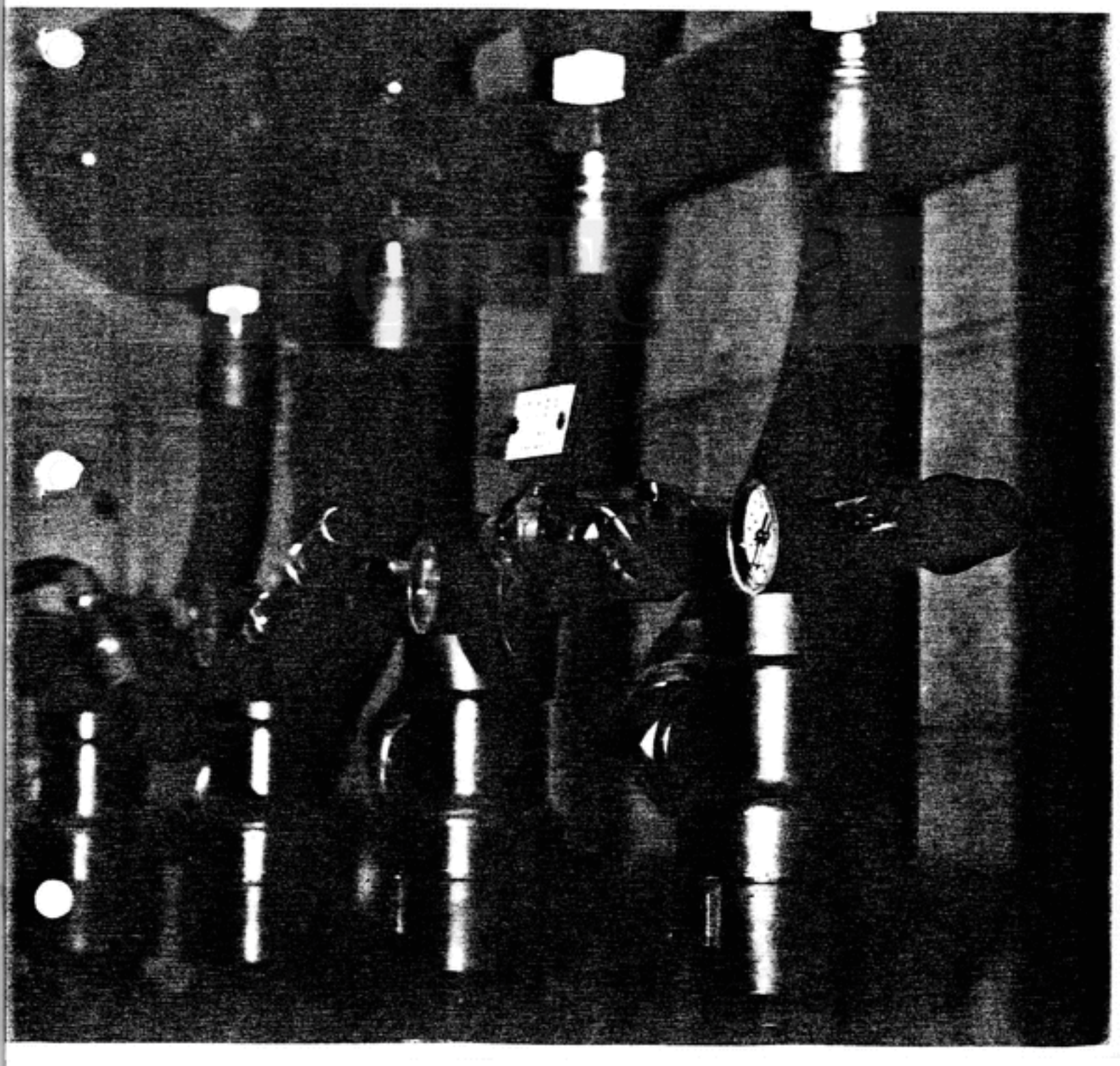
CHLORIDE GENT

Fixed Extinguishing Systems and Equipment



The Chloride Gent range of fixed extinguishing equipment has been carefully designed to ensure maximum reliability and functional operation yet be flexible for use in a wide range of risk applications.

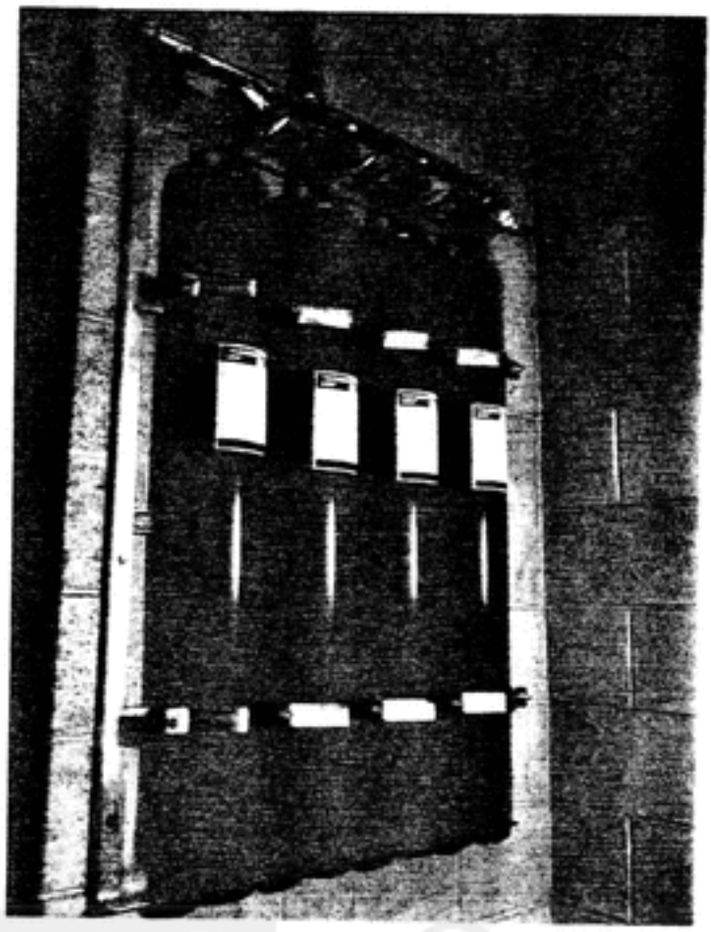
All systems conform to the requirements of the National Fire Protection Association of America Standard 12, for carbon dioxide extinguishing systems and Standard 12A for Halon 1301 systems.

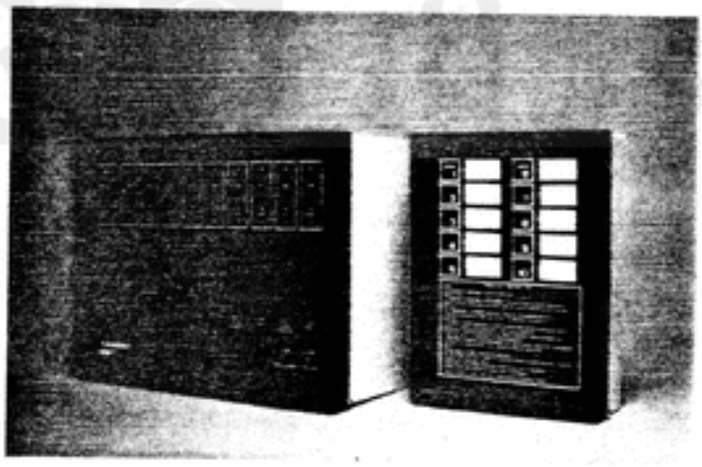
The systems are ideal for protection of electronic equipment, storage of inflammable materials and any enclosed area where items of value or rarity may be kept or stored.

Applications include:

- ☐ Computer Rooms and Data Processing Equipment
- ☐ Electronic Equipment
- ☐ Electrical Generation and Switching Equipment
- ☐ Telephone Exchanges
- ☐ Archive Stores
- ☐ Libraries
- ☐ Bank Vaults
- ☐ Spirit Stores
- ☐ Paint Spraying Equipment and Spray Booths
- ☐ Process Equipment

All Chloride Gent Systems are calculated by computer programme to ensure that they conform to the required standards. The equipment is fully compatible with the wide range of Chloride Gent fire alarm and detection systems which form an integral part of fixed extinguishing installations. Full details of Halon 1301 and Carbon Dioxide systems are available on separate publications. (Publication nos 6010, 6011, 6012).





Top:

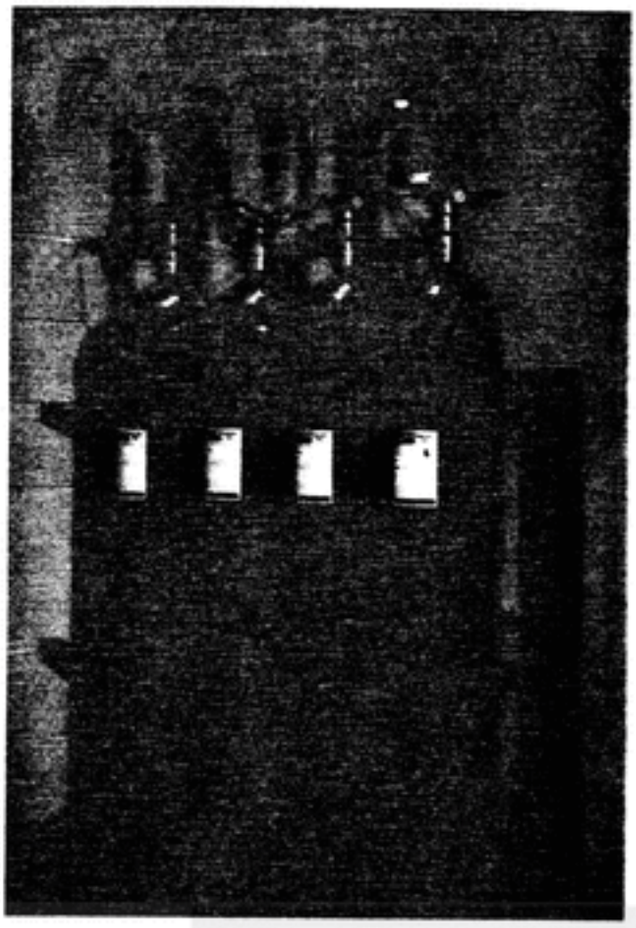
Halon 1301 Wall Mounted Modular Cylinder Unit

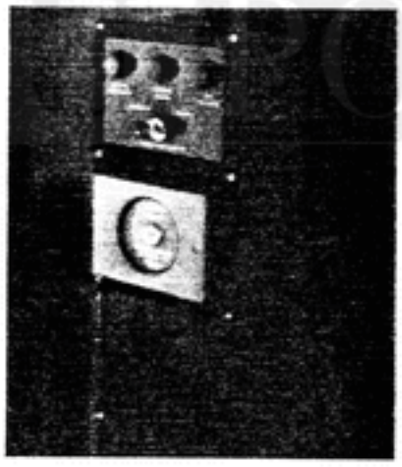
Comprehensive range of 1 to 4 Cylinder Modules of various sizes giving a complete range for the small to medium installation.

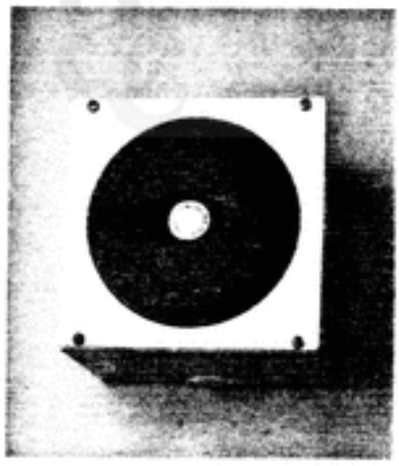
Bottom:

3215 Indicating and Control Panel

One of the range of Chloride Gent panels available for use in automatic fixed extinguishing installations.







Top:

Halon 1301 Central Bank Systems

A range of equipment for a wide variety of applications based on the Chloride Gent 75 Kg capacity, floor standing cylinder and 35mm high-flow valve. Systems can be fired by a range of manual, electrical or mechanical actuators.

Cylinder Sizes

A range of Chloride Gent cylinders are available with capacities from 3 Kg to 75 Kg.

Bottom:

Coincidence Unit, Systems Status, Lock-Off, Manual Discharge Unit

A range of units are available to ensure safety of personnel in protected areas. Providing clear indication of the status of the system together with facilities for discharging the extinguishant manually. The unit also allows the automatic system to be switched to manual override whilst a normally working area is occupied.

Automatic Detection

The Chloride Gent range of smoke detectors is normally used to provide double knock protection of fire condition in automatic systems.

2-stage Alarm

The Chloride Gent 2500 Warble Unit gives a 2-stage warning alarm. The unit provides a warble tone on the receipt of the first detector signal and a continuous note on the receipt of the second knock.

CARBON DIOXIDE SYSTEMS

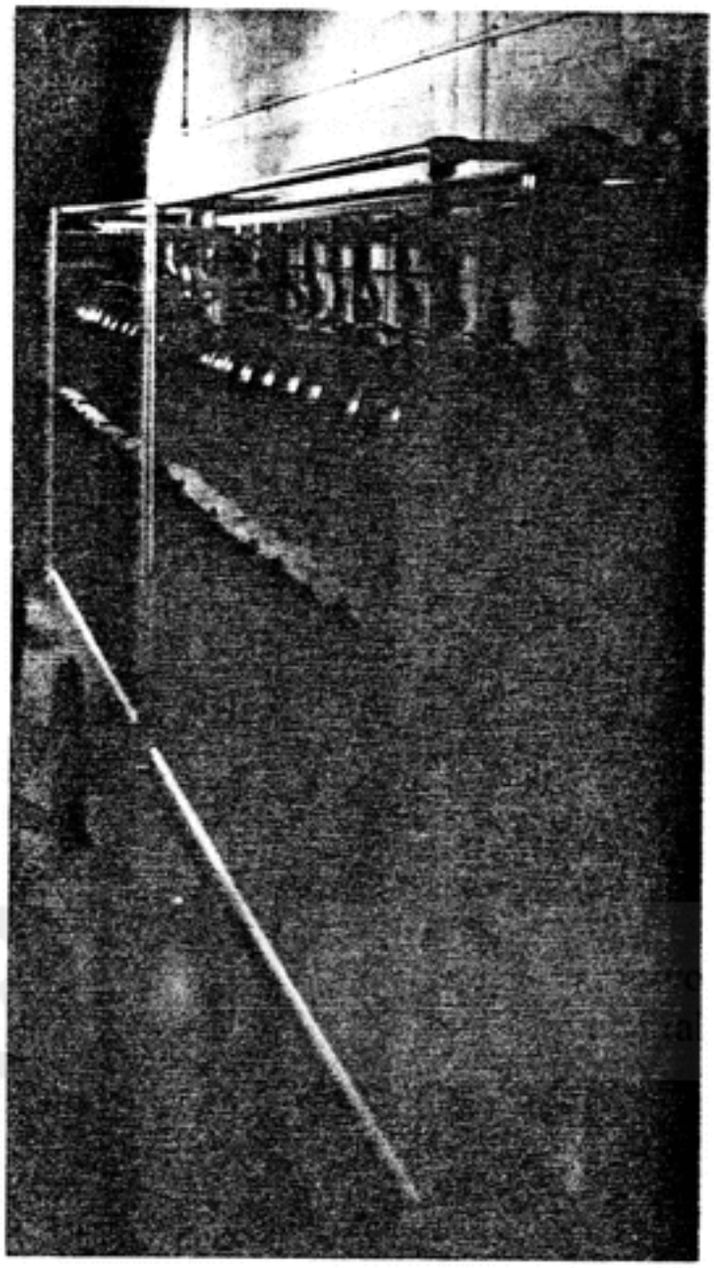
In addition to the wide range of Halon equipment available, Chloride Gent also offer a comprehensive range of carbon dioxide extinguishing equipment.

The two main types of system design are:

(a) Total flooding systems – where CO_2 is used to extinguish fires in enclosed places and areas.

(b) Local applications – where the extinguishant is used to suppress fires in equipment or locations where no confining boundaries exist, for example, process equipment located on shop floors.

Full information is available in Chloride Gent Publication 6012 which is available upon request.



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CHLORIDE GENT

CI/SfB (68·5)

Carbon Dioxide Automatic Fire Extinguishing Systems Publication 6012

Carbon dioxide has been used for many years as a fire fighting agent and is widely recognised and accepted as an ideal medium for the protection of many and varied hazards.

In 1928 the first rules for the design of such systems were drawn up and issued by the National Fire Protection Association in the United States of America. These same rules, Standard 12 NFPA are used today in revised form.

Carbon dioxide is non corrosive, non damaging and leaves no residue to clean up after a fire, minimising plant 'down time'. Carbon dioxide provides its own pressure for discharge through pipes and nozzles and as it is a gas will penetrate the spread to all parts of the protected area.

Carbon dioxide is a non conductor of electricity and can, therefore be used on live electrical hazards.

630-5

Application
Some of the more important types of hazards and equipment that carbon dioxide systems may satisfactorily protect include:-

1) Gaseous, and liquid flammable materials.
2) Electrical hazards such as transformers, oil, switches, Circuit Breakers, etc.
3) Engines using petroleum and other flammable fuels or ordinary combustibles such as paper, wooden textiles and hazardous solids.

System Design
Systems for Carbon dioxide are based on the storage of precisely calculated quantities of the agent in pressurised vessels. Valves and pipes are sized so that the agent will be discharged within the required discharge time which will depend on the risk protected.

Two types of system are available from Chloride Gent

1) High pressure where the system comprises the appropriate number of steel cylinders in which the CO_2 is stored at a pressure of 58 bar.
2) Low pressure where the system comprises a refrigerated tank in which the CO_2 is stored at a pressure of 21 bar.

The cylinders/tank may be sited either adjacent to, or some distance from, the hazard to be protected. In either case the storage pressure is sufficient to ensure that a properly engineered system, (where distribution of pipework and discharge nozzles are correctly sized), will discharge within the time required.

There are two main concepts of carbon dioxide fire extinguishing systems

1) Total flooding system; consisting of a supply of carbon dioxide arranged to discharge into and fill to the proper concentration, an enclosed space or enclosure around a hazard.
2) Local application system; consisting of a supply of carbon dioxide arranged to discharge directly upon the burning material.

The main difference between the systems is that whereas total flooding systems rely on the physical boundaries of the space to contain the gas after discharge, local application systems have no such boundaries and, therefore, require larger quantities of gas to ensure correct concentration. Systems may be designed for manual or automatic operation or a combination of both.

System Design
Carbon Dioxide is stored in 45 Kg capacity cylinders at a pressure of 58 bar, smaller cylinders are occasionally used. The number of cylinders is determined by the risk to be protected, 'Local Application' systems generally requiring higher design concentrations than 'Total Flooding' systems.

The cylinders are arranged to discharge into a common manifold connected to the distribution pipework and nozzles, the sizing of which are carefully engineered to ensure that the design concentration is achieved within the time required.

A number of carbon dioxide cylinders (a 'battery') may be sited some distance from the hazard in question which is of particular advantage where more than one hazard requires protecting; it is often more economical to install a battery of cylinders affording common protection to several hazards rather than the provision of individual batteries.

In such cases the quantity of carbon dioxide in the system shall be sufficient for the largest single hazard protected, the appropriate number of cylinders for each hazard being released automatically. The flow of gas to the relevant area is determined by a pneumatically operated distribution valve.

A system may be released automatically from a Fire Detection System, or manually from an electrical push button, pneumatic master control box, pull box or combination of these methods.

Valve/Actuator Design
Each cylinder is fitted with a pneumatically operated valve, the pressure to open the valve being provided directly from the cylinder when a built-in pilot check valve is opened.

To provide remote operation, one of the following actuators, which function by opening the pilot check valve, can be fitted to the cylinder valve.

a) Manual/Pneumatic actuator – remote operation by CO_2, Nitrogen or Compressed Air at a pressure of 6 bar to 150 bar.
b) Electrical/Pneumatic actuator – incorporates 'single shot' electrical device requiring a firing current of 2 amps for 10 milliseconds.
c) Mechanical/Pneumatic actuators – for remote operation by pull handle connected by pull wire direct to actuator.

CO_2 Physical Properties
Carbon dioxide, chemical formula CO_2, is a compound of carbon and oxygen which, under normal conditions, is a colourless, odourless gas. The density of carbon dioxide is some 50% greater than the density of air and carbon dioxide extinguishes fires by displacing oxygen in the air so that combustion cannot be supported.

Automatic Detection and Electrical Equipment
Chloride Gent CO_2 systems can be operated by any of the wide range of Chloride Gent automatic detection devices including optical or ionisation smoke detectors, flame detectors, or heat detectors.

System Operation
Detectors are usually arranged, two circuits to each protected zone. A fire condition is required on each circuit of detectors (double knock) before the panel confirms the fire condition. A coincidence circuit then actuates the CO_2 discharge cycle.

Safety Precautions
With concentrations of 9% or more, a danger to life exists and automatic fire extinguishing systems employing carbon dioxide as the extinguishing agent must be equipped to ensure that the system can be operated without hazard to personnel.

The following safety precautions are incorporated into all Chloride Gent Systems.

Lock Off Control
Whilst personnel are in the protected area the simple lock off device is incorporated at the entrance to the room enabling the automatic system to be "locked off", during the time the area is occupied.

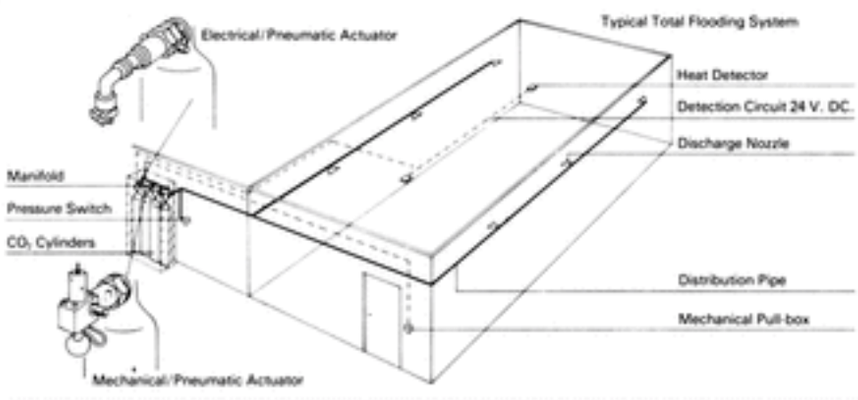
Visual Indication
Also provided at each entrance a light system shows exactly the status of the controlling circuits.

Amber Lamp – Signifies system operating automatically.
Green Lamp – Signifies system locked off and can only be discharged manually.
Red Lamp – Confirms that the system has operated and CO_2 has been discharged into the protected area.

Pre-determined Time Delay
When the system is switched to automatic – a pre-determined, adjustable delay (0-60 secs) enables personnel to leave the protected area prior to CO_2 discharge.

Audible Alarm
A two stage alarm via Chloride Gent warbler devices is usually provided for each system. This gives a continuous tone (easily distinguishable from bells, sirens, hooters used in other parts of the premises).

A Chloride Gent 2500 Warbler Alarm is utilised to provide a continuous note on the receipt of a signal from one circuit of detectors. This tone changes to a distinctive warble note when the second signal is received from the detection circuit. The warble note continues during the pre-determined time delay, prior to CO_2 discharge.



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CHLORIDE GENT

Cl/SfB (68·5)

Halon 1301 Central Bank Systems. Publication 6010

Chloride Gent Central Bank, Fixed Extinguishing Systems provide specific protection, designed and engineered to accommodate the individual demands of the area, or risk to be covered. Cylinders can be sited inside or outside the protected room or area and are readily accessible for inspection and maintenance purposes. Care has been taken to present space saving features in conjunction with a neat and tidy appearance. The standard agent container is a steel cylinder manufactured to BS 5045 having a water capacity of 67.5 litres and suitable for a maximum Halon filling of 74 Kg. The cylinder is fitted with a purpose engineered high flow capacity 32mm valve and super-pressurised with nitrogen to 42 bar to ensure system discharge within 10 seconds. The system uses Halon 1301 (Bromotrifluoromethane often abbreviated to B.T.M.), a chemical extinguishant which puts out fires by halting the combustion reaction of the fire. It is a colourless, odourless, electrically non-conductive, non-abrasive, liquified gas which leaves no residual effect.

630-9

All Chloride Gent Fixed Extinguishing Systems are designed to meet the requirements of standard 12A of the National Fire Protection Association of America and may be used in total flooding systems to protect areas normally occupied by personnel.

System Design
The United States underwriters laboratories categorise Halon 1301 as Group 6 of their toxic table, this group being the least toxic.
The Central Bank system is based upon the principle that a hazard may be protected on a total flooding basis by one or more cylinders of Halon manifolded together to form a battery which feeds a carefully engineered distribution pipework system.
To ensure a ten second discharge within the requirements of the National Fire Protection Association of America standard 12A – in particular when the cylinders are to be sited some distance from the area protected, each cylinder is super-pressurised with nitrogen to 42 bar and fitted with a high flow capacity purpose engineered 32mm valve.
Distribution pipework and discharge nozzle sizes are calculated by computer programme, a copy of the print-out being supplied to the client as proof that the flow rates used for gas discharge conform to the NFPA standard.
The use of multi-storage cylinders and selector valves permit the individual protection of more than one area from a single group of cylinders.
Systems are normally designed for operation by an automatic fire detection and control system, featuring the Chloride Gent 3213, 3214 or 3215 Control Panels. Each system is however also equipped with manual discharge facilities.
Remote operation of the system is provided by fitting a cylinder valve with a pressure operated actuator for pneumatic release, a single shot actuator for electrical release or a mechanical actuator for pull wire release.
The cylinder valve is pneumatically operated, the pressure to operate the valve being provided directly from the cylinder when a built-in pilot check valve is opened. The valve also includes a pressure gauge/pressure switch connection and a safety bursting disc assembly.
When a system comprises more than one cylinder the additional cylinders are fitted with pressure operated actuators, interconnected by high pressure hoses to the first cylinder valve actuator, such that all valves open simultaneously.
The cylinder valve outlets are connected by flexible high pressure hoses to a common manifold which releases the Halon into the distribution pipework system. Each system is carefully engineered to ensure total Halon discharge through high rate discharge nozzles within 10 seconds.

Automatic Detection and Electrical Equipment
Chloride Gent Halon 1301 Central Bank Systems can be operated by any of the wide range of Chloride Gent automatic detection devices including optical or ionisation smoke detectors, flame detectors, or heat detectors.

System Operation
Detectors are usually arranged, two circuits to each protected zone. A fire condition is required on each circuit of detectors (double knock) before the panel confirms the fire condition. A coincident circuit then actuates the Halon discharge cycle.
To ensure that the system can be operated without hazard to personnel a number of safety precautions are incorporated into Chloride Gent Systems.

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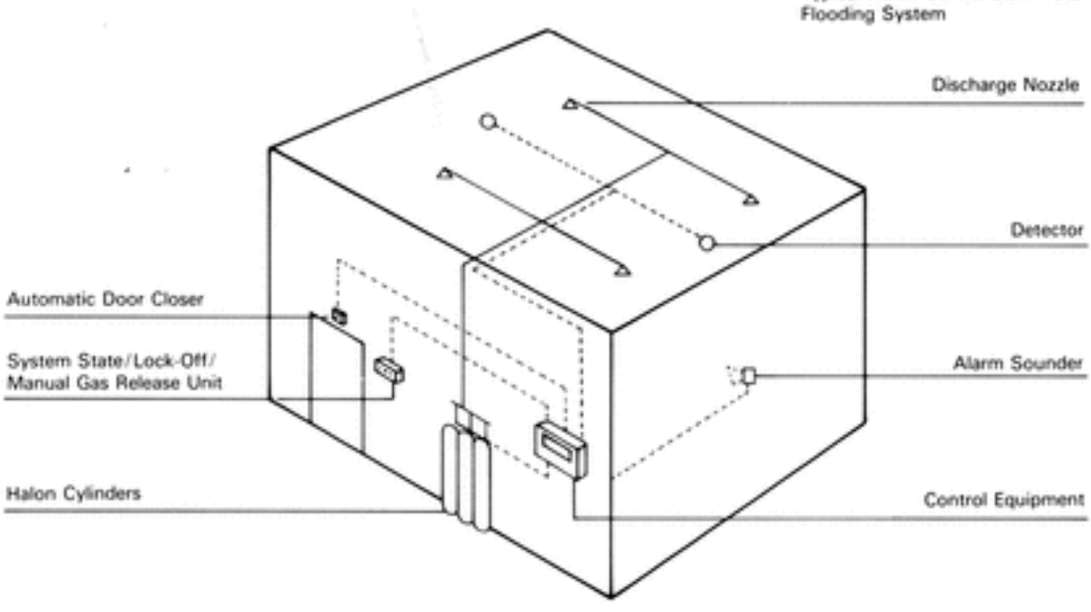
Also provided at each entrance a lights system shows exactly the status of the controlling circuits.

Amber Lamp	– Signifies system operating automatically.
Green Lamp	– Signifies system locked off and can only be discharged manually.
Red Lamp	– Confirms that the system has operated and Halon has been discharged into the protected area.

Pre-Determined Time Delay
When the system is switched to automatic – a pre-determined, adjustable time delay (0 – 60 secs) enables personnel to leave the protected area prior to Halon discharge.

Audible Alarm
A two stage alarm via Chloride Gent Warbler devices is usually provided for each system. This gives tones easily distinguishable from bells, sirens, hooters used in other parts of the premises.
The Chloride Gent 2500 Warbler Alarm is utilised to provide a continuous note on the receipt of a signal from one circuit of detectors. This tone changes to a distinctive warble note when the second signal is received from the detection circuit. The warble note continues during the pre-determined time delay, and Halon discharge period.

Typical Halon Central Bank Total Flooding System



CHLORIDE GENT

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CHLORIDE GENT

CI/SfB (68·5)

Chloride Gent Halon 1301 Modular Cylinder Fire Extinguishing Systems Publication 6011

The Chloride Gent modular cylinder system provides an ideal method of protecting any relatively small space. Its compact but flexible design characteristics afford maximum protection with minimum installation costs.
The modules are designed for wall mounting and as such do not occupy large areas of valuable space, they may be sited inside or outside the room being protected, are unobtrusive in appearance and are easily accessible for maintenance purposes.

Standard modules comprising 1, 2, 3, or 4 cylinders each pressurised at 42 bar and with a guaranteed maximum discharge time of 10 seconds are available to provide a wide range from 1 to 60 Kg Halon capacity per module. The system uses Halon 1301 (Bromotrifluoromethane often abbreviated to B.T.M.), a chemical extinguishant which puts out fires by halting the combustion reaction. Halon 1301 is a colourless, odourless, electrically non-conductive, non-corrosive, non-abrasive, liquified gas which leaves no residual effects.

630-J

System Design
The United States underwriters laboratories categorise Halon 1301 as Group 6 of their toxic table, this group being the least toxic. It may be used within standard 12A of the National Fire Protection Association of America, and applications for total flooding systems to protect areas normally occupied by personnel.
The modular cylinder system is based on the principle that a hazard may be protected on a total flooding basis by one or more cylinders of Halon, manifolded together to form a module, which feeds a carefully engineered pipework distribution system.
To ensure a 10 second discharge within the requirements of the National Fire Protection Association of America – Standard 12A, the cylinders are super-pressurised with nitrogen to 42 bar.
Maximum flexibility is provided by utilising three standard sizes of cylinder – 6 Kg, 9 Kg, and 13 Kg to build up the modules providing selection of the correct quantity of Halon for the particular hazard protected.
The table below indicates the maximum volume a particular size of cylinder would protect at various levels of Halon concentration.

Design Concentration at 20°C	Max. Vol. in m for 3 Kg Halon	Max. Vol. in m for 9 Kg Halon	Max. Vol. in m for 13 Kg Halon
5%	9	27	39
6%	7.5	22.5	32.5
7%	6.4	19.0	27.6
8%	5.5	16.5	24.0
9%	4.9	14.6	21
10%	4.3	13.0	18.7

Systems are normally arranged for automatic release from a Fire Detection Control Panel.

Systems Construction
A system comprises one or more modules, each module having the required number of one to four cylinders of the appropriate capacity fitted to a mild steel galvanised rack suitable for wall mounting.
Each cylinder is fitted with a specially designed pneumatically operated valve, the pressure to open the valve being provided directly from the cylinder when a built-in pilot check valve is opened.
The valve incorporates a hand wheel for manual opening, a gauge to indicate nitrogen pressure and a bursting disc safety device to protect the cylinder.
Remote operation of the system is provided by fitting a cylinder valve with a pressure operated actuator for pneumatic release, a single shot actuator for electrical release, or a mechanical actuator for pull-wire release.
When a module comprises more than one cylinder, the additional cylinders are fitted with pressure operated actuators interconnected by flexible hoses to the first cylinder valve actuator such that all valves open simultaneously.
The cylinder valve outlets are connected by flexible high pressure hoses to a common manifold which releases the Halon into the distribution system.
Each system is carefully engineered to ensure total Halon discharge through high rate discharge nozzles within 10 seconds.

Automatic Detection and Electrical Equipment
Chloride Gent Halon 1301 Central Bank Systems can be operated by any of the wide range of Chloride Gent automatic detection devices including optical or ionisation smoke detectors, flame detectors, or heat detectors.

Systems Operation
Detectors are usually arranged, two circuits to each protected zone. A fire condition is required on each circuit of detectors (double knock) before the panel confirms the fire condition. A coincidence circuit then commences the Halon discharge cycle.
To ensure that the system can be operated without hazard to personnel a number of safety precautions are incorporated into Chloride Gent Systems.

Lock Off Control
Whilst personnel are in the protected area the simple lock off device is incorporated at the entrance to the room enabling the automatic system to be 'locked off', during the time the area is occupied.

Visual Indication
Also provided at each entrance a lights system shows exactly the status of the controlling circuits.
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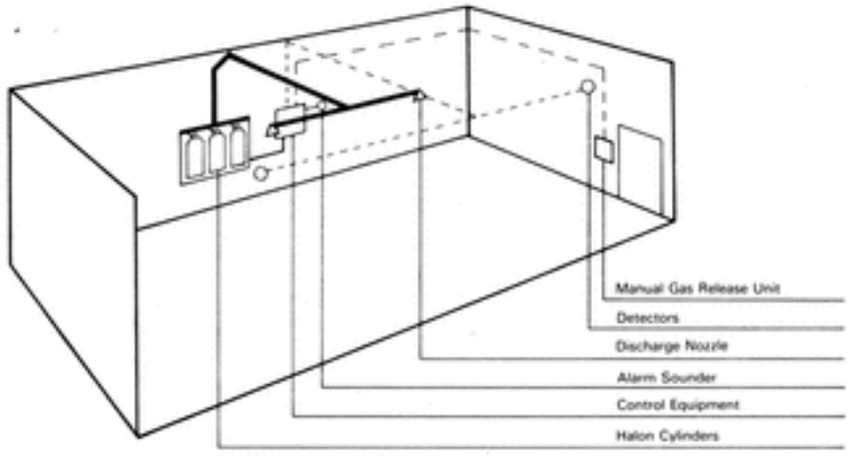
Typical Total Flooding System for small applications

If required, Halon Cylinders and control equipment can easily be sited outside the room, thus providing total system flexibility.



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