

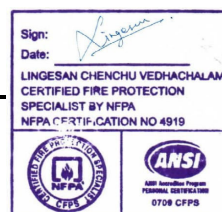
Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

DATASHEET OF CONTROL/ MONITOR MODULE

S.No	Description	Required Parameters
1	Item	Control/Monitor Module
2	Make	Schrack Seconet
3	Model No.	BX-OI3
4	Type of Device	01 no. relay output with programmed fail-safe position , 2 nos. monitored inputs and 1 opto coupler input
5	Applicable standard	VDS approved, CE certified
6	Relay output	bistable change-over contact
7	Monitored inputs	for potential-free contacts
8	Opto coupler input	Querying potentially-charged signals, or external voltages of 0-30 VDC
9	Connection	Screw clips, max. 1.5 mm ²
10	Protection class	IP 66 casing
11	Circuit Wiring	Integrated (inbuilt)
12	Operating voltage	11 to 30VDC
13	Current consumption	Typ. 550 µA
14	Addressing Capability	Automatic
15	On Board Micro Processor	Yes
16	Short circuit isolator	Serial 2 wire technology, Class -A, Style 7 integrated short circuit isolator in each module.
17	Temperature	(-20° C to +60° C) Ambient Temperature
18	Humidity	5 to 95% without condensation
19	Storage Temp.	(-40° C to +85° C)
20	Listing	VDS Approved
21	Dimension	67x67x20mm (Without casing)
22	Weight	80g Without Casing
23	Catalogue Enclosed	Yes

Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL



Ein-/Ausgangsmodul BX-OI3. Input/Output Module BX-OI3.



- Relaisausgang mit programmierbarer Fail-Safe-Lage •
- 2 überwachte Eingänge • 1 Optokopplereingang • Einfache Einbindung von Sondermeldern • Geringer Stromverbrauch •
- Hohe Störfestigkeit durch spezielles Energiemanagement •
- Integrierter Kurzschlussisolator • Gehäuse erfüllt Schutzklasse IP 66.

- relay output with programmed fail-safe position •
- 2 monitored inputs • 1 optocoupler input • simple implementation of special detectors • low power consumption • high resistance against faults thanks to special energy management • integrated short circuit isolator • case satisfies IP 66 protection class.

Beschreibung

Das Ein-/Ausgangsmodul BX-OI3 ist geeignet zum Anschluss an die Integral X-LINE.

Es enthält einen Relaisausgang mit programmierbarer Fail-Safe-Lage, zwei Eingänge für die überwachte Abfrage von potentialfreien Kontakten und einen Optokopplereingang, welcher bei Bedarf zur Überwachung einer externen Spannung verwendet werden kann.

Das BX-OI3 ist besonders geeignet zur Einbindung von Sondermeldern (Flammen- und Linearmelder, Rauchansaugsysteme, etc.) in die Integral X-LINE. Sowohl die Adressierung des Moduls, als auch die Einstellung der Parameter für die angeschalteten Sondermelder (z.B. deren Verhalten bei Alarm und Störung) erfolgt mittels PC-Software über die Brandmelderzentrale.

Das BX-OI3 enthält einen Kurzschlussisolator, welcher im Fall von Drahtbruch oder Kurzschluss dafür sorgt, dass der Fehler lokalisiert wird und gleichzeitig der Betrieb der Ringleitung in vollem Funktionsumfang erhalten bleibt, zusätzlich wird die Spannung auf der Ringleitung intern auf Unterspannung überwacht.

Das BX-OI3 ist in ein Kunststoffgehäuse mit Schutzart IP 66 eingebaut, welches je nach Bedarf mit verschiedenen Kabeleinführungen ausgestattet werden kann.

Die Verwendung eines geschirmten Brandmeldekabels wird empfohlen, besonders in Bereichen, wo EMV-Störgrößen vorhanden sind, oder solche bedingt durch Arbeitsprozesse periodisch auftreten können.

Für die Projektierung gelten die landesspezifischen Richtlinien für Planung und Einbau von automatischen Brandmeldeanlagen.

Description

The input/output module BX-OI3 is suitable for the connection to Integral X-LINE.

It contains a relay output with a programmable fail-safe position, two inputs for monitored querying of potential-free contacts and an optocoupler input which can be used, if required, for monitoring external voltages.

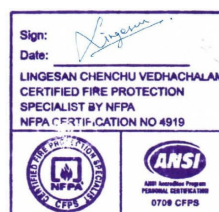
The BX-OI3 is particularly well-suited for connecting special detectors (flame and line detectors, smoke aspirating systems etc.) using Integral X-LINE. Addressing of the module as well as setting the parameters for connected special detectors (e.g. how they behave when there is an alarm or a fault) is carried out via the fire alarm control panel using PC software.

The BX-OI3 contains a short circuit isolator which guarantees, that a possible failure is located and that the loop stays in unrestricted function even in case of a wire break or a short circuit, in addition the voltage on the loop line is internally monitored on under voltage.

The BX-OI3 is installed in a IP 66 protection class plastic case, which can be fitted with different cable inlets depending on requirements.

A shielded cable installation is recommended, particularly in cases, where electromagnetic disturbances occur, or such could be caused periodically during working processes.

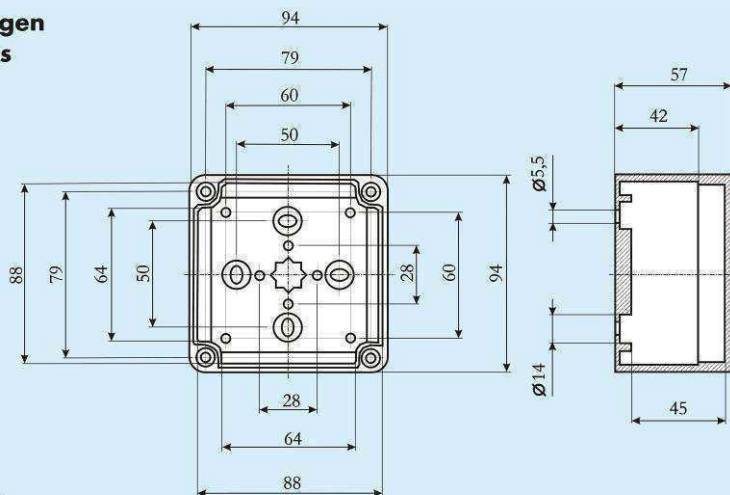
The country-specific guidelines for planning and installation of automatic fire alarm systems are applicable.



FIRE ALARM

Ein-/Ausgangsmodul BX-OI3. Input/Output Module BX-OI3.

Abmessungen Dimensions



Alle Maße in mm
All dimensions in mm

Technische Daten

Betriebsspannung: 12 bis 30 VDC
Stromverbrauch: typ. 550 μ A
Signalübertragung: seriell, 2-Leiter-Technik
Relaisausgang: bistabiler Umschaltekontakt
230 V/2 A, (max. 60 W)
Überwachte Eingänge: für potentialfreie Kontakte
Optokopplereingang: Abfrage von potentialgebundenen
Signalen, bzw. externen
Spannungen von 0 bis 30 VDC
Anschluss: Schraubklemmen, max. 1,5 mm²
Kurzschlussisolator: integriert
Schutzart: IP 66 mit Gehäuse
Umgebungstemperatur: -20° bis +60°C
Rel. Luftfeuchtigkeit: 5 bis 95% ohne Kondensation
Abmessungen: 67 x 67 x 20 mm
(mit Gehäuse 94 x 94 x 57 mm)
Gehäuse: Polystyrol, halogenfrei
Farbe: grau (RAL 7035)
VdS-Zulassung: G210133
CE-Zertifikat: 0786-CPD-21011

Technical data

Operating voltage: 12 to 30 VDC
Current consumption: typ. 550 μ A
Signal transmission: serial, 2 wire technology
Relay output: bistable change-over contact
230 V/2 A, (max. 60 W)
Monitored inputs: for potential-free contacts
Optocoupler input: Querying potentially-charged
signals, or external voltages of
0-30 VDC
Connection: Screw clips, max. 1.5 mm²
Short circuit isolator: integrated
Protection class: IP 66 with case
Ambient temperature: -20° to +60°C
Relative air humidity: 5 to 95% without condensation
Dimensions: 67 x 67 x 20 mm
(with case 94 x 94 x 57 mm)
Case: Polystyrol, halogen-free
Colour: grey (RAL 7035)
VdS-Approval: G210133
CE-Certificate: 0786-CPD-21011

Weitere Informationen sind der Technischen Dokumentation zu entnehmen.
Further informations can be obtained from the technical documentation.



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FIRE ALARM

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Technische Änderungen vorbehalten - subject to technical modifications

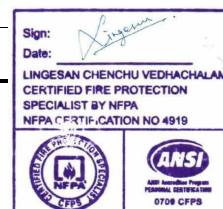
Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

DATASHEET OF MULTI SENSOR DETECTOR

Sr. No.	Description	Required Parameters
1	Item	Multi sensor detector Base
2	Make	Schrack Seconet
3	Type of detector	Multi sensor detector- can be used as a smoke detector, as a heat detector or as a combined smoke / heat detector as well. Having integrated short circuit isolator
4	Model No.	MTD 533X + USB 501-X
5	Applicable standard	VDS approved, CE certified, EN 54
6	Mounting	On base (Twist & Lock), IP44
7	Sensing Element	Photoelectric chamber for smoke detection, Thermistor for heat detection.
8	Sensitivity	Smoke acc. to EN-54-7 Heat acc. to EN 54-5; classes A1, A2 and B (Index S and R)
9	Sensitivity Adjustment	Yes
10	Fixed Temperature setting	Different 9 Temperature class as per EN54 including Fixed 57° C
11	Circuit Wiring	Serial two wire technology , Class-A , Style 7 integrated short circuit isolator in each detector.
12	Operating Voltage	12 to 30VDC
13	Addressing	Automatic
14	On Board Micro Processor	Yes
15	Normal Operating Current/ Alarm Current	Quiescent current- 120µA typ
16	Short circuit isolator	Integrated (inbuilt)
17	Temperature Range	(-20° C to +60° C) Ambient Temperature
18	Humidity Range	Permanent, Without Condensation: at ≤ 34° C: 10 ...95 % rel/ F at > 34° C: max. 35 g/m3 min. 10% rel/ F
19	Storage temperature	-40°C to +85°C
20	Mounting Base model no.	USB 502-6
21	LED indication	LED alarm indicator 360° Visible
22	Listing	VDS approved, CE certified
23	Addressable capability	Yes
24	Dimension	Ø 118mm, Height: 68 mm (incl. base)
25	Weight	125 g Without base
26	Smoke Density	0.07 dB/ m2 to 0.37 dB/ m2
27	Catalogue enclosed	Yes

Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL



Mehrfachsensormelder MTD 533X.

Multiple Sensor Detector MTD 533X.



- ein Melder für alle Anwendungen • Branderkennung immer mittels Rauch- und Temperatúrauswertung • optimierte Rauchkammer • Rauchvoralarm bei 30 % und bei 75 % der Alarmschwelle • Speicherung aller Melderdaten und Ereignisse • dynamische Anpassung an Umgebungsbedingungen • 2-stufige Verschmutzungserkennung • parametrierbare Wärmeklassen gemäß EN 54 • LED Alarmanzeige 360° sichtbar • integrierter Kurzschlussisolator • VdS-Zulassung

- one detector for all applications • fire detection always carried out by means of smoke and temperature evaluation • optimized smoke chamber • Smoke pre-alarm at 30 % and at 75 % of the alarm threshold • all detector data and events are stored • adapts dynamically to surrounding conditions • 2 stage pollution detection • adjustable temperature classes acc. to EN 54 • LED alarm indicator 360° visible • integrated short circuit isolator • VdS-approval

Beschreibung

Der Mehrfachsensormelder MTD 533X kann je nach Bedarf und Anwendung als Rauch-, als Temperatur-, oder als kombinierter Melder eingesetzt werden und wird jeweils entsprechend seinem Einsatzgebiet anlagen-spezifisch programmiert und eingestellt. Er erkennt frühzeitig Schmelbrände und offene Brände, indem er sowohl die Brandkenngröße Rauch (mittels Tyndall-Prinzip) als auch Wärme (NTC-Sensor-Prinzip) detektieren und auswerten kann. Die Empfindlichkeit kann über Software im Rahmen der EN 54 angepasst werden.

Der Melder verfügt über einen integrierten Kurzschlussisolator, der es im Kurzschlussfall auf einer Ringleitung ermöglicht, das schadhafte Leitungselement zu isolieren und den Betrieb aller Melder aufrecht zu erhalten.

Ein dynamischer Alarmfilter dient zum Erkennen und Ausfiltern von Täuschungsgrößen, darüber hinaus kann bei Bedarf ein Voralarm ausgewertet und an die Zentrale weitergeleitet werden. Wechselnde Umwelteinflüsse werden kompensiert, indem sich der Melder in regelmäßigen Abständen automatisch an seine Umgebung anpasst.

Die Montage und Installation des MTD 533X erfolgt mittels der Montagesockel-Serie USB 501.

Für die Projektierung gelten die länderspezifischen Richtlinien für Planung und Einbau von automatischen Brandmeldeanlagen. Für kombinierte Brandmelder können zusätzliche Richtlinien gelten, sofern dauernd oder zeitweise eine der Detektionseigenschaften abgeschaltet wird.

Description

The MTD 533 multiple sensor detector can be used as a smoke detector, as a **heat detector** or as a combined smoke/heat detector upon demand and is programmed and set-up specifically for the environmental conditions that it is part of. It detects smouldering and open fires at an early stage by being able to detect and evaluate the characteristics of fire and smoke (Tyndall principle) as well as heat (NTC sensor principle). The sensitivity of the detector can be adjusted using software within the scope of EN 54.

The detector provides an integrated short circuit isolator that, in case of a short circuit on the loop, enables the isolation of the faulty element while maintaining the operation of all other detectors.

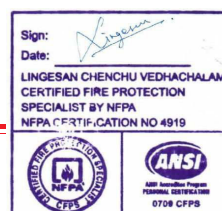
A dynamic alarm filter is used to detect and filter out deceptive alarms, furthermore a pre-alarm can be evaluated and forwarded to the control panel, if required. To compensate changing environmental influences, the detector adjusts itself at periodic intervals to its surroundings.

The assembly and installation is done by means of the mounting base series USB 501.

For planning and installation, the country-specific guidelines for planning and installation of automatic fire alarm systems apply. It could be possible, that additional guidelines and regulations for combined fire detectors must be taken into account, if continuously or temporarily one of the detection principles is switched off.

FIRE ALARM

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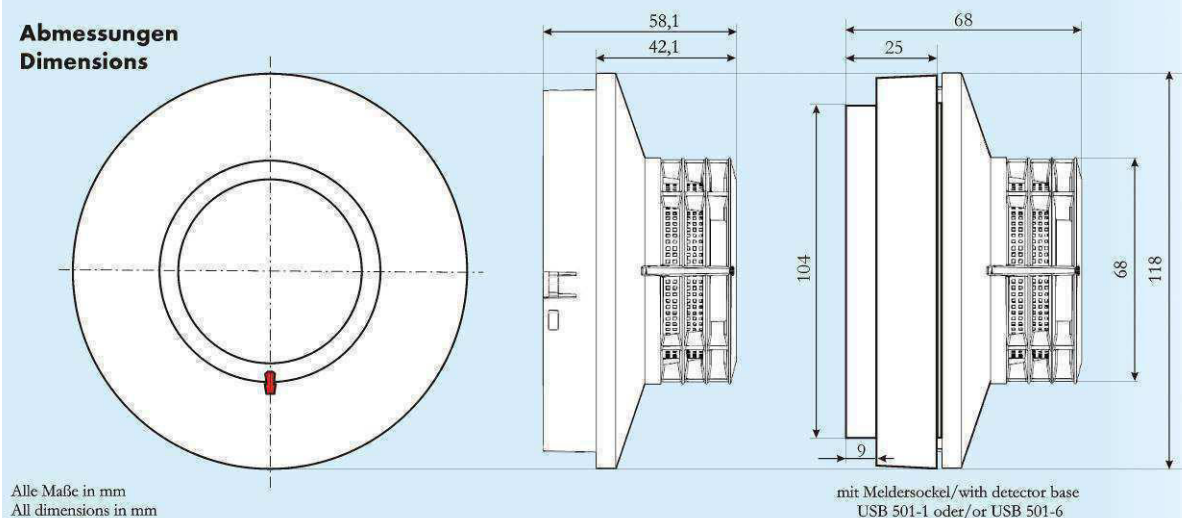


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Mehrfachsensormelder MTD 533X.

Multiple Sensor Detector MTD 533X.

Abmessungen Dimensions



Technische Daten

Betriebsspannung:	12 bis 30 VDC (ohne Modulationshub)
Ruhestrom:	120 µA typ.
Alarmausgang:	3 Stufen programmierbar 0,1 mA/1 mA/5 mA
Alarm-LED aktiv:	1,6 mA
Alarmstrom:	min. 0,5 mA, max. 10 mA
Ausgangsspannung:	programmierbar
X-LINE:	5 V
Ringleitung:	6,3 V
Meldersockel:	USB 501-x
Funktionsprinzip:	Kombinierter Rauch/Wärmemelder (Tyndall-Effekt/NTC Sensor)
Signalübertragung:	serielle Biphase Datenübertragung, 2-Leiter-Technik
Empfindlichkeit:	Rauch nach EN 54-7
Empfindlichkeit:	Wärme nach EN 54-5; Klassen A1, A2, B (Index S und R)
Schutzart:	IP 44 (mit Sockel USB 501-1)
Umgebungstemperatur:	-25° bis +60°C
Rel. Luftfeuchtigkeit:	dauernd, ohne Betauung:
bei ≤ 34 °C:	10 ... 95 % rel/F
bei > 34 °C:	max. 35 g/m³ min. 10 % rel/F
Luftgeschwindigkeit:	max. 20 m/s
Abmessungen:	siehe Maßzeichnung oben
Gehäuse Farbe:	weiß ähnlich RAL 9003 alle RAL Farben auf Anfrage
Gehäuse Material:	ABS/PC
Gewicht:	125 g
CE-Zertifikat:	0786-CPD-20993
VdS-Zulassung:	G210115

Technical data

Operating voltage:	12 to 30 VDC (without modulation amplitude)
Quiescent current:	120 µA typ
Alarm output:	3 levels programmable 0,1 mA/1 mA/5 mA
Alarm-LED active:	1,6 mA
Alarm current:	min. 0,5 mA, max. 10 mA
Output current:	programmable
X-LINE:	5 V
Loop technology:	6,3 V
Detector base:	USB 501-x
Principle of function:	Combined smoke/heat detector (Tyndall effect and/or NTC sensor)
Signal transmission:	serial biphase data transmission, 2-wire -technology
Sensitivity:	smoke acc. to EN 54-7 heat acc. to EN 54-5; (classes A1, A2 and B (Index S and R)
Protection class:	IP 44 (with base USB 501-1)
Ambient temperature:	-25° to +60°C
Rel. humidity:	permanent, without condensation:
at ≤ 34 °C:	10 ... 95 % rel/F
at > 34 °C:	max. 35 g/m³ min. 10 % rel/F
Air velocity:	max. 20 m/s
Dimensions:	see drawing above
Case colour:	white similar to RAL 9003 all RAL colours upon request
Case material:	ABS/PC
Weight:	125 g
CE-Certificate:	0786-CPD-20993
VdS-Approval:	G210115

Weitere Informationen sind der Technischen Dokumentation zu entnehmen.
Further informations can be obtained from the technical documentation.

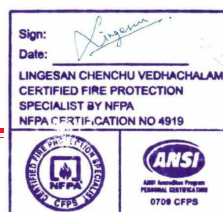
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Technische Änderungen vorbehalten - subject to technical modifications

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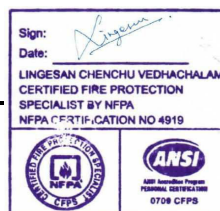
Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

DATASHEET OF MANUAL CALL POINT

S.No	Description	Required Parameters
1	Make	Schrack Seconet
2	Model No.	M CP 545X-1R(For Indoor) M CP 545X-3R(For Outdoor)
3	Type of device	Break glass
4	Application standard	VDS Approved, EN 54-11 & EN 54-17
5	Circuit wiring	Integrated (Inbuilt)
6	Operating Voltage	7 to 31 VDC
7	Quiescent current	max. 120 μ A at 30 VDC
8	Alarm current	2,5 mA
9	Short circuit isolator	Serial, 2-wire technology, Integrated Short circuit isolator
10	Protection class:	IP 24 (M CP 545X-1R) IP 67 (M CP 545X-3R)
11	Ambient temperature	-20° to +50°C
12	Humidity	5 to 95% without condensation
13	On board microprocessor	Yes
14	Addressing capability	Automatic
15	Connections	Screw
16	Housing colour	Red, RAL 3001
17	Housing material	Plastic, Glass fibre-reinforced
18	Weight	M CP 545X-1R: 160 g M CP 545X-3R: 240 g
19	Dimension	93x89x59.5 mm (M CP 545X-1R) 93x97.5x71 mm(M CP 545X-3R)
20	Resetting of M CP	The alarm condition remains active, until the glass panel is replaced by a new one or the plastic pane is reset. A Test key is available for function test
21	Catalogue enclosed	Yes

Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL



Handfeuermelder MCP 545X. Manual callpoint MCP 545X.



- einfache Installation • Gehäuse in rot, blau oder gelb • Schutzart IP 24 bis IP 67 • Alarmanzeige mittels LED • Störungsmeldung bei Bauteilausfall • Melder einzeln abschaltbar • integrierter Kurzschlussisolator • geprüft nach EN 54-11 & EN 54-17.

- easy installation • case available in red, blue or yellow • IP protection class from IP 24 up to IP 67 • alarm indication by LED • fault message in the event of a component failure • detectors can be individually disabled • integrated short circuit isolator • approved according to EN 54-11 & EN 54-17.

Beschreibung

Die Handfeuermelder MCP 545X sind geeignet zum Anschluss an die Integral X-LINE.

Die drei verschiedenen Ausführungen unterscheiden sich lediglich durch ihre Gehäuseform (IP-Schutzart), Elektronik, Anschaltung und Funktion ist bei allen Typen ident.

Die Melder enthalten einen Kurzschlussisolator und eine rote Alarm-LED. Die Alarmauslösung erfolgt durch Eindrücken der Glasscheibe bzw. Drücken des Kunststoff-Plättchens. Der Alarm bleibt bis zum Wiedereinsetzen einer neuen Glasscheibe bestehen bzw. resetieren des Kunststoff Plättchen bestehen. Ein Prüfschlüssel dient zur Funktionsprüfung.

Der MCP 545X-1 ist geeignet für Innenanwendungen und wird Aufputz montiert. Die Dose wird mit zwei Schrauben an der Wand befestigt, dabei müssen die Befestigungspunkte für den Tasterteil waagrecht sein. Eventuell nötige Kabeleinführungen für AP-Installationen müssen aufgebohrt werden.

Der MCP 545X-2 ist geeignet für Innenanwendungen und wird direkt in eine handelsübliche Unterputzdose Größe 1 (rund od. viereckig) eingebaut. Der Befestigungsloch-Abstand beträgt 60 mm waagrecht.

Der MCP 545X-3 ist auch für Außenanwendungen geeignet und wird Aufputz montiert. Der Melder verfügt über Schutzart IP 67 (wasserfest); die Kabeleinführung erfolgt mittels Kabelverschraubung M 20 von unten oder oben. Die Dose des Melders wird mit drei Schrauben an der Wand befestigt.

Description

The manual call points MCP 545X are suitable for the connection to the Integral X-LINE.

The three different versions differ only from the shape of the housing (IP protection category). Electronics, connection and function are the same for all types.

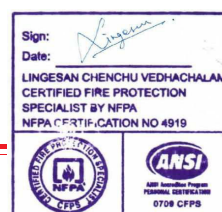
The detectors contain a short circuit isolator and a red alarm LED. An alarm is released directly when the glass pane is broken or the plastic pane is pressed. The alarm condition remains active, until the glass pane is replaced by a new one or the plastic pane is reset. A test key is available for function test.

The MCP 545X-1 is suitable for indoor applications and surface-mounting. The surface-mounted box is fastened to the wall with two screws. The fastening points for the switch part must be horizontal. Any necessary cable entries for surface-mounted installations must be drilled.

The MCP 545X-2 is suitable for indoor applications and is mounted in a commercial flush-mount box (size 1; round or square). The horizontal distance between the mounting holes is 60 mm.

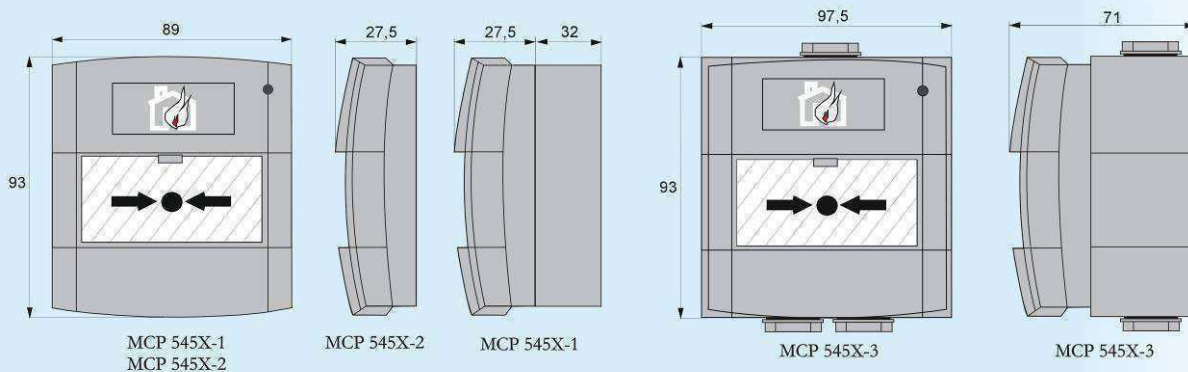
The MCP 545X-3 is also suitable for outdoor applications and surface-mounting. The detector has protection category IP 67 (waterproof); the cable entry is carried out by means of cable gland M20 from the bottom. The mounting box is attached to the wall with three screws.

FIRE ALARM



Handfeuermelder MCP 545X. Manual callpoint MCP 545X.

Abmessungen Dimensions



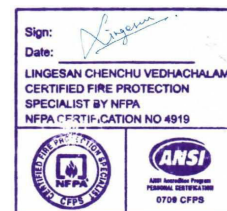
Alle Maße in mm
All dimensions in mm

Technische Daten

Betriebsspannung:	7 bis 31 VDC
Ruhestrom:	max. 120 µA bei 30 VDC
Alarmstrom:	2,5 mA
Anschaltung:	Integral X-LINE
Schraubanschlüsse:	max. 2,5 mm ²
Signalübertragung:	seriell, 2-Leiter-Technik
Schutzart	
MCP 545X-1/2:	IP 24
MCP 545X-3:	IP 67
Umgebungstemperatur:	-20° bis +50°C
Gehäuse Farbe:	rot, RAL 3001 gelb, RAL 1006 blau, RAL 5002
Gehäuse Material:	Kunststoff, glasfaserverstärkt
Gewicht	
MCP 545X-1/2:	160 g/110 g
MCP 545X-3:	240 g
Zulassung:	rot, G210092 (EN 54-11: 2001, EN 54-17: 2005) gelb, entsprechend (EN 54-11: 2001, EN 54-17: 2005) blau, entsprechend (EN 54-11: 2001, EN 54-17: 2005)
CPD-Zertifikat:	rot, 0786-CPD-20998

Technical data

Operating voltage:	7 to 31 VDC
Quiescent current:	max. 120 µA at 30 VDC
Alarm current:	2,5 mA
Connection:	Integral X-LINE
Screw terminals:	max. 2,5 mm ²
Signal transmission:	serial, 2-wire
Protection class	
MCP 545X-1/2:	IP 24
MCP 545X-3:	IP 67
Ambient temperature:	-20° to +50°C
Housing colour:	red, RAL 3001 yellow, RAL 1006 blue, RAL 5002
Housing material:	plastic, glass fibre-reinforced
Weight	
MCP 545X-1/2:	160 g/110 g
MCP 545X-3:	240 g
Approval:	red, G210092 (EN 54-11: 2001, EN 54-17: 2005) yellow, according (EN 54-11: 2001, EN 54-17: 2005) blue, according (EN 54-11: 2001, EN 54-17: 2005)
CPD-Certificate:	red, 0786-CPD-20998



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FIRE ALARM

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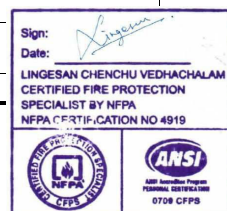
Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

Data Sheet of Beam Detector

S.No	Description	Required Parameters
1	Item	Beam Detector
2	Make	Schrack Seconet
3	Model No.	SPC-E
4	Type of Detector	Beam Detector for high ceiling area
5	Applicable Standard	VDS Approved
6	Mounting	Wall mounting- Transmitter & Receiver shall be mounted on wall
7	Operating Voltage	15 to 33 VDC
8	Working principle	In the event of a fire, the rising smoke reduces the intensity of the infra-red ray between the transmitter and receiver and an alarm is sent to the fire alarm control panel.
9	Sensitivity Adjustment	3 level can be set 25%, 50%, 60%
10	Operating Voltage	15 to 33 VDC
11	Addressing	Through Addressable interface module (BX-013). Separate data-sheet submitted for BX-013 along with modules .
12	Normal Operating / Alarm current	Quiescent current : 250 μ A max Alarm current : 50 mA
13	Temperature Range	(-10° C to +50° C) Ambient Temperature
14	Humidity Range	95% to non- condensing
15	Dimensions	86 x 100 x 145 (transmitter and receiver)
16	Mounting Brackets	Provided
17	LED indication	LED s for operation, fault and alarm
18	Mounting	Wall mounting
19	Weight	Receiver: 685 g, Transmitter: 600g
20	Wall Mount Brackets	Yes
21	IS 24 V power supply required for both sender & receiver from FPS Panel or External power supply is required for sender.	24 V DC power supply is required for transmitter as well as receiver. Power supply can be provided from FAS or External power source.
22	Catalogue Enclosed	Yes

Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL



Liniowa czujka dymu SPC-E. Linear Smoke Detector SPC-E.



- składa się z nadajnika i odbiornika • nadzorowany odcinek od 5 do 100 m • kompaktowa obudowa • niski pobór prądu • ustawiane 3 poziomy czułości (25%, 50% i 60% zadymienia) • automatyczna funkcja kompensacji oddziaływania środowiska i zakłóceń • dopuszczenie VdS zgodnie z EN 54-12.

- consists of a transmitter unit and a receiver unit • monitoring area 5 to 100 m • compact case • low power consumption • 3 sensitivity levels which can be set differently (25, 50 or 60% smoke diffusion) • automatic compensation features to compensate for environmental and fault-causing influences • VdS-Approval in accordance with EN 54-12.

Opis

Liniowa czujka dymu SPC-E składa się z nadajnika i odbiornika, które są montowane naprzeciw siebie w odległości od 5 do 100 metrów.

W przypadku wystąpienia pożaru powstający dym osłabia promieniowanie podczerwone, przebiegające pomiędzy nadajnikiem i odbiornikiem, co powoduje, że do centrali sygnalizacji pożarowej zostaje wysłany sygnał alarmowy.

Czułość SPC-E jest ustawiana w trzech poziomach czułości: przesłonięcie 25, 50 lub 60%. Zakłócenia tj. stałe zmiany temperatury i wilgotności powietrza są automatycznie kompensowane.

Pomiędzy nadajnikiem a odbiornikiem musi być stały, niezakłócony kontakt wizualny. Urządzenia muszą być solidnie zamontowane do konstrukcji budynku i wolne od wahań i wibracji.

Nadajnik i odbiornik muszą zostać zamontowane albo za pomocą dostarczanych płytek montażowych albo za pomocą przegubów montażowych ściennych lub sufitowych.

Liniowa czujka dymu SPC-E jest podłączona do techniki pętli dozorowych Integral poprzez moduł BA-OI3 lub poprzez kartę B3-DCI6, pracującą w technice stałoprądowej Integral.

Przy planowaniu, projektowaniu i instalacji liniowych czujek dymu należy stosować się do odpowiednich przepisów krajowych dotyczących planowania i instalacji systemów sygnalizacji pożarowej.

Description

The linear smoke detector SPC-E consists of a transmitter unit and a receiver unit, which can be fitted opposite one another at a distance of between 5 to 100 m.

In the event of a fire, the rising smoke reduces the intensity of the infrared ray between the transmitter and receiver and an alarm signal is sent to the fire alarm control panel.

The sensitivity of the SPC-E can be set to one of three smoke diffusion levels: 25%, 50% or 60 %. Deceptive influences, like e.g. constantly changing ambient temperatures and different levels of air humidity, are automatically compensated.

A permanent, undisturbed line of sight must exist between the detector and the reflector, and the locations of where the detectors are fitted must be firmly attached to the building structure, and vibration-free and oscillation-free.

Transmitter and receiver can be either snapped on the provided mounting plates, or be installed by means of additional joint mounting plates on the wall or at the ceiling.

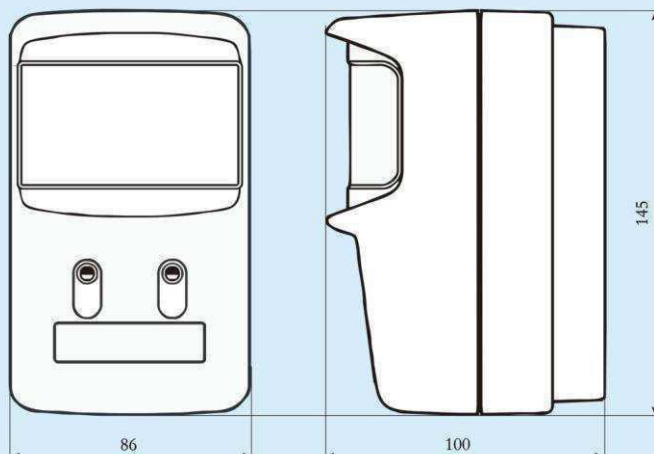
The SPC-E is either connected to the Integral loop circuit via the BA-OI3 module, or to the Integral DC-technology via the module B3-DCI6.

For planning, project engineering and installation of linear smoke detectors, the country-specific guidelines for planning and installation of automatic fire alarm systems are applicable.

Liniowa czujka dymu SPC-E. Linear Smoke Detector SPC-E.

Wymiary Dimensions

Wszystkie wymiary w mm
All dimensions in mm

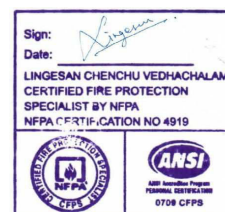


Dane techniczne

Napięcie robocze: 15 do 33 VDC
Prąd spoczynkowy: maks. 250 μ A
Prąd alarmowy: maks. 50 mA
Odległość nadzorowania: 5 do 100 m
Przetwarzanie sygnału: 8-bitowy Mikroprocesor
Czułość: 3 ustawiane poziomy: 25%, 50%, 60%
Wskaźniki: diody LED: praca, uszkodzenie i alarm
Kompensacja: zabrudzenie układu optycznego kompensowane $\pm$ 1% co pół godz.
Stopień ochrony: IP 42
Temperatura otoczenia: -10° do + 50°C
Maks. wilgotność względna: 95 % bez kondensacji
Kolor: biały
Wymiary: 86 x 100 x 145 (nadajnik i odbiornik)
Waga: odbiornik: 685 g
nadajnik: 600 g
Dopuszczenie VdS: G207152
Certyfikat CPD: 0832-CPD-0547

Technical data

Operating voltage: 15 to 33 VDC
Quiescent current: 250 μ A max.
Alarm current: 50 mA max.
Monitoring length: 5 to 100 m
Signal processing: 8-Bit microprocessor
Sensitivity: 3 levels adjustable: 25%, 50%, 60%
Indicators: LEDs for operation, fault and alarm
Compensation: Contamination of the optical sensor compensated by $\pm$ 1% hourly
Protection class: IP 42
Ambient temperature: -10° to + 50°C
Max. air humidity: 95 % non-condensing
Colour: white
Dimensions: 86 x 100 x 145 (sender and receiver unit)
Weight: Receiver: 685 g
Sender: 600 g
VdS-Approval: G207152
CPD-Certificate: 0832-CPD-0547



SCHRACK SECONET Polska Sp. z o. o.

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Siedziba Główna Austria: A-1120 Wiedeń, Eibesbrunnengasse 18 • Tel.: +43-1-81157-0 • office@schrack-seconet.com • www.schrack-seconet.pl

Oddziały w: CZ H IND PL RO RUS S SK TR

Przedstawicielstwa w: ARM AZ BG BH BY CH CY D DK E EST ET F GE GR HR I IL KS KSA KWT KZ L LT LV MK N NL P PK RB RL SLO SRB TM UA UAB UZ

FIRE ALARM

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SCHRACK
S E C O N E T

Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited

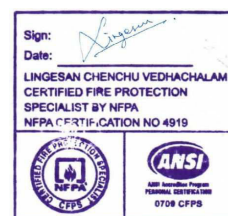
Project : 2 x 660 MW Maitree Super Thermal Power Project

Client : Bharat Heavy Electricals Limited

Package : Fire Detection and Alarm System

DATASHEET OF HOOTER

S. No	Description	Required Parameters
1	Make	Schrack
2	Model No.	VTB-32
3	Type of sound	32 (can be set)
4	operating Voltage	18 to 35 VDC
5	Ambient temperature	-20° to +70°C
6	Case Colour	white or red
7	Alarm current:	41 mA max. (dependent on sound)
9	Signal volume	78 to 98 dB @ 1 m (dep. on sound)
10	Signal frequency:	440 to 2900 Hz
11	Protection class:	IP 43 / IP 65
12	Catalogue enclosed	Yes



Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL

Kombinierte Sirene/ Blitzleuchte VTB-32. Combined Siren/ Flashing Light VTB-32.



Beschreibung

Die kombinierte Sirene/Blitzleuchte VTB-32 dient zur gleichzeitigen akustischen und optischen Anzeige eines Brandalarms.

Die kompakte und robuste Bauart garantiert große Zuverlässigkeit bei langer Lebensdauer und auch bei widrigen Umgebungsbedingungen, kann die VTB-32 sowohl in Innen- als auch in Außenbereichen montiert werden.

Der integrierte elektronische Tongenerator bietet eine Auswahl von 32 Tonvarianten, darunter zum Beispiel auch den deutschen DIN Ton und den Slow Whoop Ton, welche über DIP-Switch Schalter eingestellt werden können.

Die Tonvarianten unterscheiden sich durch unterschiedliche Frequenzen/ Frequenzfolgen mit konstanter oder modulierter Lautstärke. Je nach Tonart, eingestellter Lautstärke und Betriebsspannung variiert der Schalldruck zwischen 78 dB und 98 dB, die Lautstärke kann je nach Bedarf reguliert werden.

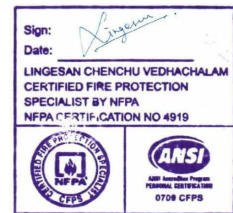
In der Standard-Ausführung verfügt das Gerät über Schutzart IP 43, durch Verwendung eines speziellen Sockels kann die Schutzart auf IP 65 erhöht werden.

Die kombinierte Sirene/Blitzleuchte ist in den Gehäusefarben rot oder weiß lieferbar.

Die Montage erfolgt mit zwei Schrauben durch den Sockel an Wand oder Decke, die Kontaktierung der Sirene/Blitzleuchte mit dem Sockel erfolgt mittels Bajonettverschluss.

- 32 verschiedene Warntöne über DIP- Schalter einstellbar
- Lautstärke bis zu 98 dB
- wahlweise mit Schutzart IP 43 oder IP 65
- Sirene kann mittels DIP- Schalter deaktiviert werden
- Gehäusefarbe rot oder weiß.

- 32 different tones which can be set using DIP switches
- volume up to 98 dB
- optional available with protection category IP 43 or IP 65
- siren can be deactivated by means of DIP switch
- available with red or white case.



Description

The combined siren/ flashing light VTB-32 is for the simultaneous acoustic and visual indication of a fire alarm.

The unit's compact and robust construction ensures the unit's reliability and a long lifespan, even in the presence of unfavourable environmental conditions, thereby making the VTB-32 suitable for installation both Indoors and outdoors.

The integrated electronic tone oscillator offers 32 different tones, including the German DIN tone and the Slow whoop tone, which can be set using DIP switches.

The different tones have varying frequencies and sequences of frequencies, either with constant or modulated volume. Dependant on the type of tone selected, the volume that has been set and the operating voltage, the sound level varies between 78 dB and 98 dB, with the volume being regulated as necessary.

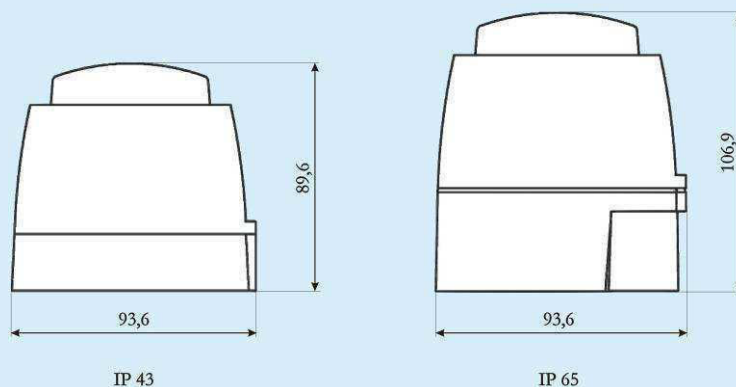
The standard version of the device fulfils protection class IP 43, and by using a special base, it is possible to increase the device's protection class to IP 65.

The combined siren/ flashing light is available with red or white coloured case.

The device is fitted using two screws which attach the base to a wall or ceiling, with the siren/ flashing light's contact to the base happening via a bayonet fitting.

Kombinierte Sirene/ Blitzleuchte VTB-32. Combined Siren/ Flashing Light VTB-32.

Abmessungen Dimensions



Alle Maße in mm
All dimensions in mm

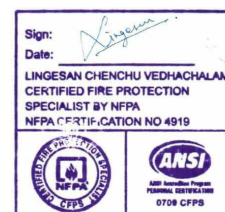
Technische Daten

Betriebsspannung:	18 bis 35 VDC
Alarmstrom:	41 mA max. (je nach Ton)
Signalpegel:	78 bis 98 dB @ 1 m (je nach Ton)
Signalfrequenz:	440 bis 2900 Hz
Tonarten:	32 (einstellbar)
Schutzart:	IP 43 / IP 65
Umgebungstemperatur:	-20° bis +70°C
Gehäusefarbe:	weiß oder rot
Abmessungen:	IP 43: 93,6 x 89,6 mm (D x H) IP 65: 93,6 x 106,9 mm (D x H)
Gewicht:	IP 43: 233 g IP 65: 258 g

Technical data

Operating voltage:	18 to 35 VDC
Alarm current:	41 mA max. (dependent on sound)
Signal volume:	78 to 98 dB @ 1 m (dep. on sound)
Signal frequency:	440 to 2900 Hz
Types of sound:	32 (can be set)
Protection class:	IP 43 / IP 65
Ambient temperature:	-20° to +70°C
Case colour:	white or red
Dimensions:	IP 43: 93.6 x 89.6 mm (D x H) IP 65: 93.6 x 106.9 mm (D x H)
Weight:	IP 43: 233 g IP 65: 258 g

Weitere Informationen sind der Technischen Dokumentation zu entnehmen.
Further informations can be obtained from the technical documentation.



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FIRE ALARM

www.schrack-seconet.com

SCHRACK
S E C O N E T

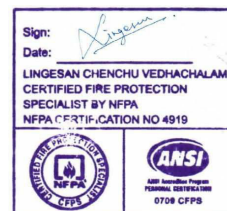
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© Schrack Productions - B-DB-0038DIE-EN - VTB-32 - V2.0
Technische Änderungen vorbehalten - subject to technical modifications

Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

DATASHEET OF RESPONSE INDICATOR

Sr. No.	Description	Required Parameters
1	Item	Agni Suraksha
2	Make	Agni
3	Model No.	AGNI-502
4	Compatibility	Compatibility with all detector
5	LED	Dual LED lamp
6	Application	For above False ceiling detector
7	Mount	Wall and Ceiling Mount
8	Material	ABS Plastic
9	Cable entry	Back side of component
10	Voltage	24V DC
11	Alarm current	10 mA
12	Colour	White or Off white
13	Dimension	61m.m x 72m.m x 18m.m (HxWxD)
14	Storage Temperature	(-40° C to +85° C)
15	Catalogue enclosed	Yes



Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL

RESPONSE INDICATOR (For False Ceiling)



AGNI-502

FEATURES

Compatibility with all Detectors

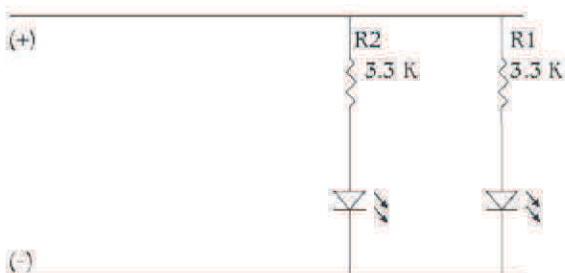
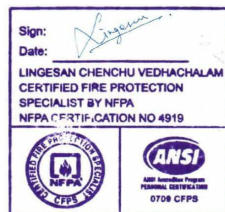
Dual LED Lamp

Wall Mounted

Ceiling Mount

ABS Plastic

Indoor use Only



TECHNICAL

SIZE H61m.m x W72m.m x D18m.m

Wire Entrance Back side of the Component

Alarm Current 10 mA,

LED Lamp 5 m.m

LED Lamp Glow Light colour red

Enclosure Colour White or Off White

Voltage 24v Dc

Mounting Methods in of the Cabnet

Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited

Project : 2 x 660 MW Maitree Super Thermal Power Project

Client : Bharat Heavy Electricals Limited

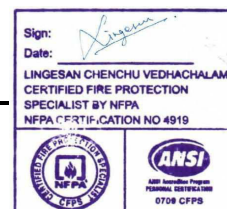
Package : Fire Detection and Alarm System

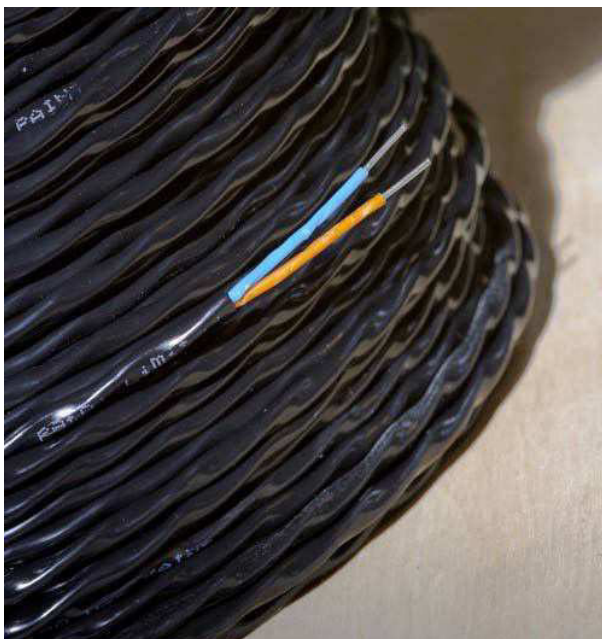
DATASHEET OF LINEAR HEAT DETECTION CABLE

S. No.	Description	Required Parameters
1	Make	Patol
2	Model No.	700-090
3	Country of origin	U.K
4	Type	Digital Heat Sensing Cable
5	Principal of operation	Insulation Plasticizes to create short circuit between conductors
6	Insulation Color	Cable sheath- Black
7	Temperature	-20°C to +70°C
8	Voltage Rating	110V dc max.
9	Conductor material	Tinned copper coated steel
10	Conductor Diameter	0.9mm
11	Maximum Conductor Resistance per km	100 Ω/km
12	Number of Cores	2
13	Alarm Temperature	
13.1	Maximum Ambient Temperature	70°C
13.2	Minimum Alarm Temperature	80 °C
13.3	Maximum Alarm Temperature	90 °C
14	Response time	5 seconds (small flame)
15	Outer diameter	4.0mm +/- 0.3mm
16	Protective Cover	
16.1	Insulation	Temperature Reactive Polymer insulation
16.2	Insulation Material Thickness	0.35mm
16.3	Outer Sheath	Nylon (Black)
17	Suitable operating voltage	24 V DC
18	Approval	UL listed
19	Catalogue enclosed	Yes

Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL



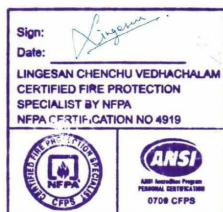


The Patol Digital Linear Heat Detection Cable is designed to provide early detection of Fire conditions and overheating in circumstances where other forms of detection would not be viable, either due to an inability to sustain the environment requirements or through prohibitive costs.

Extensive single zonal lengths of the LHDC Digital may be installed with the ability to trigger alarms for hot spots occurring on very small sections of the overall cable.

The LHDC may be employed in a wide variety of applications but is particularly suited where there is harsh environmental condition, a physical or hazardous maintenance access constraint to protect the area, and / or a requirement to cost effectively install detection in close proximity to the risk(s).

The primary mechanism of LHDC is that the inner core insulating polymer is specially formulated such that it plasticizes at a specific temperature.



Features

SIL 2 Approved when used with DIM module

Early Detection of hazards at temperatures well below flame point.

Rugged construction—Stainless Steel outer sheath available

Fixed Alarm Trigger Temperature

Compatible with many existing zone monitors / Control Equipment

Intrinsically Safe Configurable for Hazardous Areas

UL Listed

Applications

Cable Tunnels, Ducts & Mezzanines

Escalators & Moving Walkways

Petro-Chemical Storage Tanks / Rim Seal Protection

Paint Shops & Spray Booths

Conveyors - Coal, Wood Sulphur.. etc

Ceiling Voids & Attic Spaces

Road & Rail Tunnel Carriageways

Nuclear Reactor Plant Areas

Refrigerated Stores & Cold Rooms

Electrical Control & Switchgear Cabinets

Warehouse High Rise Pallet Racking

Oil Rigs & Off Shore Platforms

Fume Cupboards & Glove Boxes

Grain Silos & Agricultural Storage

Road / Rail Vehicle Engine Compartments

Steam pipe Leaks & Trace Heating Faults

Product Lines - Flanges, Valves & Pumps

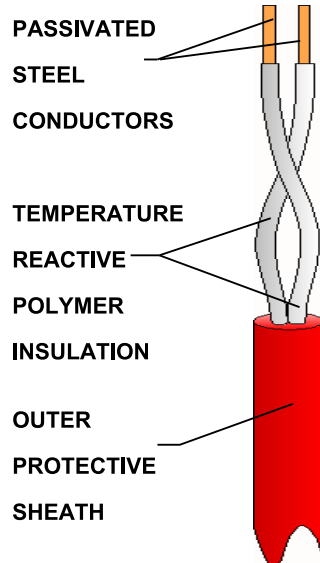
Computer Room under Floor Cable Voids

Digital

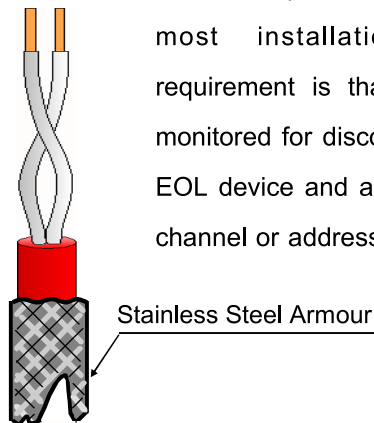
Linear Heat Detection Cable LHDC

Cable Construction

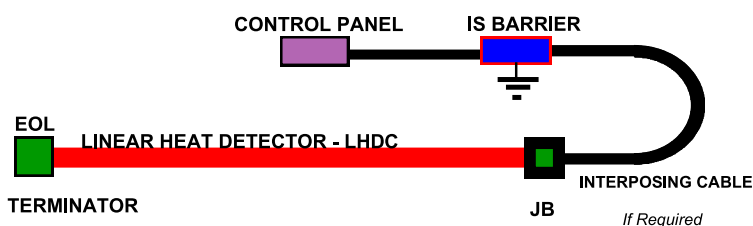
The Patol Digital LHDC comprises of a twisted pair twin core cable. Each core is of tinned copper coated spring steel and has a special heat reactive polymer insulation. The cable has an overall protective jacket / sheath.



LHDC Digital may be used as a simple switch to operate a relay etc. However in most installations the minimum requirement is that the LHDC circuit is monitored for disconnections by means of EOL device and an appropriate fire alarm channel or address loop interface unit.



Intrinsically Safe Configuration



Specification

Number of Cores: 2
Alarm Temperature: 700-070 = 70°C 700-090 = 90°C
Max Ambient Temperature: 700-070 = 45°C 700-090 = 70°C
Minimum Operating Temperature: -40°C
Minimum Installation Temperature: -10°C
Outer Sheath: Nylon (Black)* Nylon with Stainless Steel Braid* * UV & Chemical Resistant
Voltage Rating: 110 VDC Maximum
Outer Diameter: Nylon 3.5 - 4.5mm Nylon & Stainless Steel Braid 4.0 - 5.0mm
Weight: 1km on the reel 21kg
Approval: UL Listed

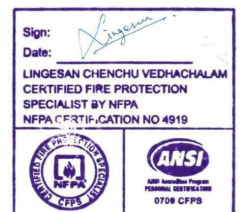
Ordering Information

Description	Part Number
Nylon 70°C	700-070
Nylon S.S* 70°C	700-071
Nylon 90°C	700-090
Nylon S.S* 90°C	700-091

*Stainless Steel Braid

Controllers and Termination boxes used with the above Digital cables:

LDM-519-DDL	700-451
LDM-519-DIM	700-441 (SIL 2 Approved)
EOL & Through box	refer D1210



PATOL
FIRE DETECTION SOLUTIONS



UTHV.S24081 Heat-actuated Devices for Special Application

[Page Bottom](#)

Heat-actuated Devices for Special Application

[See General Information for Heat-actuated Devices for Special Application](#)

PATOL LTD

S24081

RECTORY RD

PADWORTH COMMON, BERKSHIRE RG7 4JD UNITED KINGDOM

fixed temperature line type heat detector cable for indoor/outdoor use, Models 700-090 and 700-070. Intended to be connected to a UL Listed control unit. Model 700-090 temperature ratings are: 90° C (194° F) maximum - 80° C (176° F) minimum alarm temperature. Model 700-070 temperature ratings are: 70° C (158° F) maximum - 60° C (140° F) minimum alarm temperature.

[Last Updated on 2006-03-21](#)

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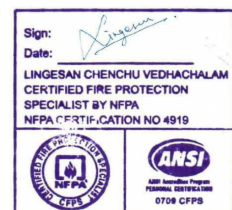
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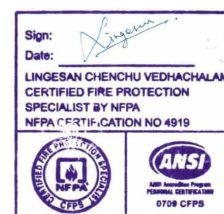
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Customer: Bangladesh-India Friendship Power Company (Pvt.) Limited
 Project : 2 x 660 MW Maitree Super Thermal Power Project
 Client : Bharat Heavy Electricals Limited
 Package : Fire Detection and Alarm System

DATASHEET OF UPS

S. No	Description	Required Parameters
1	Make	Hitachi
2	Model No.	IP11S-1
3	Nominal Voltage	110 VAC to 240 VAC
4	Capacity	1000 VA / 800 W
5	Frequency Range	47- 70 Hz
6	Output Voltage	100 VAC to 240 VAC
7	Voltage Regulation	+/- 1%
8	Current Crest Ratio	03:01:00
9	Waveform (Batt. Mode)	Pure Sine wave
10	Standard Model (WxDxH)	397 x 145 x 220 mm
11	Net Weight	13 Kg
12	Humidity	20 – 90 % RH
13	Phase	Single Phase with Ground
14	Catalogue enclosed	Yes

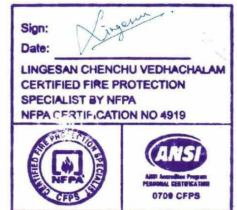


Customer : Bangladesh-India Friendship Power Company (Pvt.) Limited

Contractor : BHEL

UPS and Power Conditioning Solutions

IP11 & HS11 Series IT UPS



 **Hitachi Hi-Rel Power Electronics Pvt. Ltd.**
Pioneer in Power Electronics

UPS | Drives | Solar Inverters

IP11 Series IT UPS

Single Phase Input - Single Phase Output
1 kVA to 3 kVA

Configuration

1. Standalone UPS
2. Standalone with inbuilt isolation transformer
3. HSB mode with individual battery bank
4. In-built battery



IP11 UPS is a true on-line UPS with microprocessor controller that delivers continuous, high-quality AC power to connected equipment with no interruption when transferring to battery.

IP11 UPS provides protection from blackouts, brownouts, sags, surges or noise interference and provides reliable and stable power.

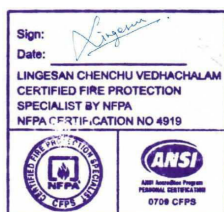
IP11 UPS is a full feature transformer free UPS designed to offer compact, efficient and reliable solutions to modern electronic gadgets. It features true double conversion on line back up power solution for small data centres, data networks, voice networks and process automation equipments.

IP11 UPS provides customers with a reliable source of uninterruptible power even in harsh power environment, including very wide input voltage/frequency window, better output voltage regulation, frequency regulation, internal bypass, and input power factor correction and low THDi.

IP11 UPS has built-in RS-232 and bundled monitoring software. This online UPS offers enhanced performance for power monitoring.

Advantages

- Easy to install and operate
- Compact footprint
- Robust and reliable connectivity
- LCD interface
- UPS can be configured with or without battery
- UPS can be configured to ECO mode
- Designed to operate in challenging electrical environment
- Low EMI emission compliant for commercial installation
- Large input voltage window



THE SOLUTION FOR

- Small range server and corporate network
- Routers, switches and hubs
- Personal workstation
- Security system
- Service sector, Wi-Fi application
- Infrastructure, small office network
- Health sector, medical equipments
- Banks and ATMs
- Sensitive electronics equipments
- Process automation equipments

FEATURES

- High frequency and double conversion on-line technology
- Advanced PFC & IGBT technology
- Lighting and surge protection
- Fan speed auto control when loads varies
- Short circuit and overload protection
- Smart RS 232 communication with monitoring software
- EMI/RFI noise filter
- MTBF 300000 hrs
- Cold start facility
- Hot standby configuration
- High input power factor

OPTIONAL FEATURES

- Extended battery pack
- SNMP card
- Output power factor 0.9
- Internal isolation transformer
- Remote monitoring service through SNMP
- Modbus card
- AS-400
- Universal socket
- 6A extra charger card

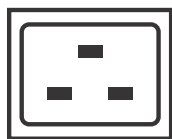
TECHNOLOGY

Advanced PFC & IGBT technology

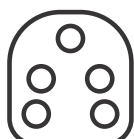
CERTIFICATION

CE & BIS

Input / Output Connection

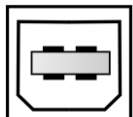


AC Input

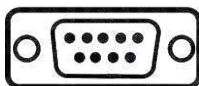


Output Receptacle

Communication Connection



USB Port

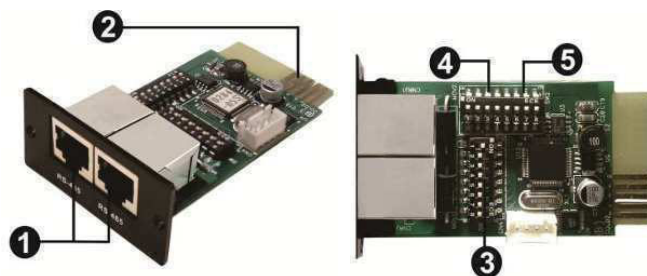


RS-232 Port



Intelligent Slot

MODbus

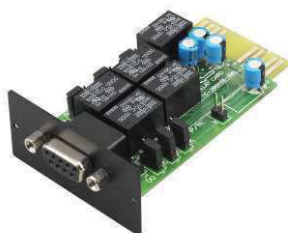


- 1 RS-485 port
- 2 Golden finger
- 3 Address switch
- 4 Communication setting

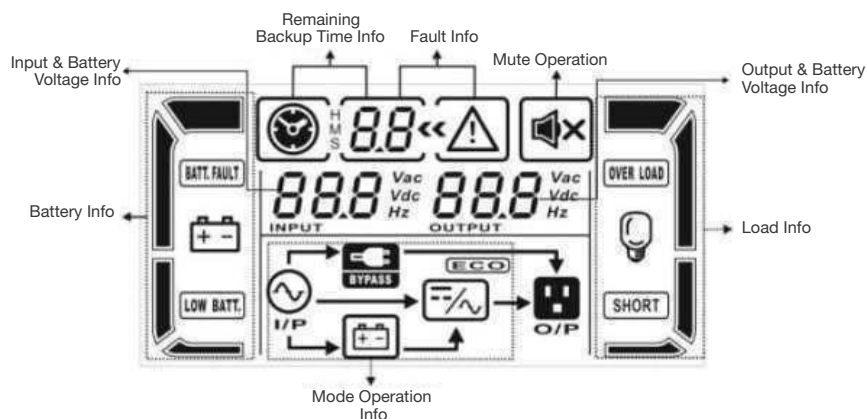
SNMP



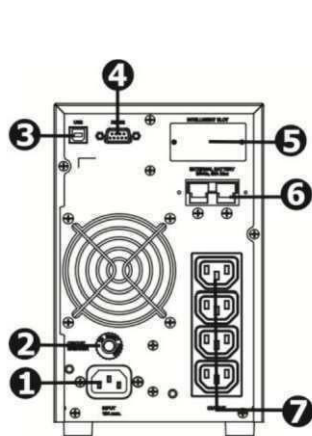
AS-400
Remote shutdown



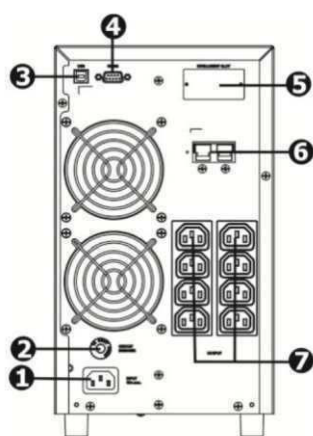
Control Panel



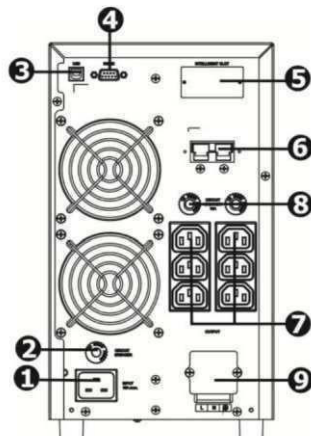
Connections



iP11-1 kVA



iP11-2 kVA

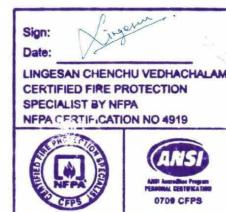


iP11-3 kVA

- 1 AC input
- 2 Input circuit breaker
- 3 USB communication port
- 4 RS-232 communication port
- 5 SNMP intelligent slot
- 6 External battery connection
(only available for L model)
- 7 Output receptacles
- 8 Output circuit breaker
- 9 Output terminal

IP11 Series IT UPS

Single Phase Input - Single Phase Output
1 kVA to 3 kVA



Technical Specifications

Model		IP11S-1/IP11H-1		IP11S-2/IP11H-2		IP11S-3/IP11H-3	
Phase		Single Phase with Ground					
Capacity		1000 VA / 800 W		2000 VA / 1600 W		3000 VA / 2400 W	
Input							
Nominal Voltage		100 / 110 / 115 / 120 / 127 VAC or 200 / 208 / 220 / 230 / 240 VAC					
Input Voltage Range		55 - 150 VAC or 110 - 300 VAC (Based on Load at 50%) 85 - 140 VAC or 160 - 280 VAC (Based on Load at 100%)					
Frequency Range		40 Hz ~ 70 Hz					
Power Factor		≥ 0.99 @ Nominal Voltage (100% Load)					
Output							
Output Voltage		100 / 110 / 115 / 120 / 127 VAC or 200 / 208 / 220 / 230 / 240 VAC					
Voltage Regulation		± 1%					
Frequency Range (Synchronized Range)		47~ 53 Hz or 57 ~ 63 Hz					
Frequency Range (Batt. Mode)		50 Hz ± 0.25 Hz or 60 Hz ± 0.3 Hz					
Overload		Ambient Temp <30°C 105% - 110% UPS Shut Down After 10 min. at Battery Mode or Transfer to Bypass When Utility is Normal 110% - 130% UPS Shut Down After 1 min. at Battery Mode or Transfer to Bypass When Utility is Normal >130% UPS Shut Down After 3 sec. at Battery Mode or Transfer to Bypass When Utility is Normal					
Current Crest Ratio		3:1					
Harmonic Distortion		≤ 3 % THD (Linear Load) ≤ 6 % THD (Non-Linear Load)					
Transfer Time	AC Mode to Battery Model Inverter to Bypass	Zero 4 ms (Typical)					
Waveform (Batt. Mode)		Pure Sinewave					
Efficiency							
AC Mode (Overall)		88%		88%		90%	
Battery Mode (Inverter)		83%		87%		88%	
Battery							
Standard Model	Battery Type	12 V / 7 AH					
	Numbers	3		6			
	Typical Recharge Time	4 Hours Recover to 90% Capacity					
	Charging Current (max.)	1A					
	Charging Voltage	41.0 VDC ± 1%		82.1 VDC ±1%			
Long-run Model*	Battery Type	Depending on the Capacity of External Batteries					
	Numbers	3		6	8	6	8
	Charging Current (max.)	1A / 2A / 4A / 6A (Adjustable)					
	Charging Voltage	41.0 VDC ± 1%		82.1 VDC ±1%	109.4 VDC ±1%	82.1 VDC ±1%	109.4 VDC ±1%
Indicators							
LCD		Load Level, Battery Level, AC Mode, Battery Mode, Bypass Mode and Fault Indicators					
Alarm							
Battery Mode		Sounding Every 4 Seconds					
Low Battery		Sounding Every Second					
Overload		Sounding Twice Every Second					
Fault		Continously Sounding					
Physical							
Standard Model	Dimensions (WxDxH) (mm)	397 x 145 x 220		419 x 190 x 318			
	Net Weight (kgs)	13		26	30.5	28	33
Long-run Model**	Dimensions (WxDxH) (mm)	397 x 145 x 220					
	Net Weight (kgs)	7		13		13	
Environment							
Humidity		20 - 90 % RH @ 0 - 40°C (Non-Condensing)					
Noise Level		Less than 50dBA @ 1 meter					
Management							
Smart RS-232/USB		Supports Windows 2000 / 2003 / XP / Vista / 2008 / 7 / 8, Linux, Unix and MAC					
Optional SNMP		Power Management from SNMP Manager and Web Browser					

* 1 - 3 kVA: Derate to 80% of capacity in frequency converter mode and to 80% when the output voltage is adjusted to 100 / 200 / 208 VAC

** Long-run model is only available in 200 / 208 / 220 / 230 / 240 VAC systems (200 VAC system only available for 1-3 kVA)

* Product specifications are subject to change without further notice