

Title	: TDS for Smoke Detectors	
Project	: PRAGATI CCPP, 2x750KW	Package : Fire Protection & Detection System

A.0	MULTISENSOR DETECTOR		
1.0	MAKE	:	SCHRACK SECONET
2.0	TYPE	:	ANALOGUE ADDRESSABLE
3.0	MODEL NO	:	MTD533
4.0	Operating Principle		
4.1	Scattered Light	:	Tyndall Principle
4.2	Temperature Detector	:	NTC Heat Sensor
5.0	Operating Voltage	:	16 to 30V DC
6.0	Quiescent current	:	200 μ A (typ.)
7.0	Alarm Current	:	20 mA max. (when LED active)
8.0	Signal Transmission	:	Serial biphasic data transmission, 2 wire technology
9.0	Ingress Protection	:	IP-44 (with USB 501-1 base)
10.0	Ambient Temperature	:	-25 Deg C to +60 Deg C
11.0	Relative Humidity	:	Short time/without condensation 95% rel/F continuous/without condensation 70% rel/F
12.0	Case Material	:	ABS/ PC
13.0	LED	:	360deg visibility of alarm LED indicator
14.0	Dimension	:	Dia 118mm, height 67.5mm
15.0	Addressing	:	Soft addressing
16.0	Short Circuit Isolator	:	Integrated (built-in)
17.0	Case Colour	:	White
18.0	Sensitivity	:	Conformant to EN54-7 and EN54-5(classes A1, A2, Index S and R)
19.0	Permissible Speed	Airflow :	Max. 20 m/s
20.0	Other Features	:	Software algorithm for evaluating the characteristics of fire.
		:	Smoke measuring chamber with 2 response thresholds and compensation for contamination
		:	Fault signal in the event of component failure
21.0	Base	:	USB 501-1
21.1	Protection Class	:	IP - 54
21.2	Ambient Temperature	:	-20 Deg. C to + 70 Deg. C
21.3	Case Material	:	ABS/PC, FR 90
21.4	Weight	:	65 g
22.0	Inspection & Testing	:	As per approved ICL
23.0	Quantity	:	As per approved BOQ/Drawing
24.0	Design Coverage	:	25 sq.M.
25.0	Approval	:	Vds approved
26.0	Catalogue	:	Attached

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Title : TDS for Smoke Detectors		
Project : PRAGATI CCPP, 2x750KW	Package : Fire Protection & Detection System	

B.0 PHOTOELECTRIC DETECTOR			
1.0	MAKE	:	SCHRACK SECONET
2.0	TYPE	:	ANALOGUE ADDRESSABLE
3.0	MODEL NO	:	MTD533
4.0	Operating Principle	:	
4.1	Scattered Light	:	Tyndall Principle
4.2	Temperature Detector	:	NTC Heat Sensor
5.0	Operating Voltage	:	16 to 30V DC
6.0	Quiescent current	:	200 μ A (typ.)
7.0	Alarm Current	:	20 mA max. (when LED active)
8.0	Signal Transmission	:	Serial biphasic data transmission, 2 wire technology
9.0	Ingress Protection	:	IP-44 (with USB 501-1 base)
10.0	Ambient Temperature	:	-25 Deg C to +60 Deg C
11.0	Relative Humidity	:	Short time/without condensation 95% rel/F continuous/without condensation 70% rel/F
12.0	Case Material	:	ABS/ PC
13.0	LED	:	360deg visibility of alarm LED indicator
14.0	Dimension	:	Dia 118mm, height 67.5mm
15.0	Addressing	:	Soft addressing
16.0	Short Circuit Isolator	:	Integrated (built-in)
17.0	Case Colour	:	White
18.0	Sensitivity	:	Conformant to EN54-7 and EN54-5(classes A1, A2, Index S and R)
19.0	Permissible Airflow Speed	:	Max. 20 m/s
20.0	Other Features	:	Software algorithm for evaluating the characteristics of fire.
		:	Smoke measuring chamber with 2 response thresholds and compensation for contamination
		:	Fault signal in the event of component failure
21.0	Base	:	USB 501-1
21.1	Protection Class	:	IP - 54
21.2	Ambient Temperature	:	-20 Deg. C to + 70 Deg. C
21.3	Case Material	:	ABS/PC, FR 90
21.4	Weight	:	65 g
22.0	Inspection & Testing	:	As per approved ICL
23.0	Quantity	:	As per approved BOQ/Drawing
24.0	Design Coverage	:	25 sq.M.
25.0	Approval	:	Vds approved
26.0	Catalogue	:	Attached

Client : BHEL	UML Doc. No. P269-D-042		
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MTD 533 Multiple Sensor Detector.

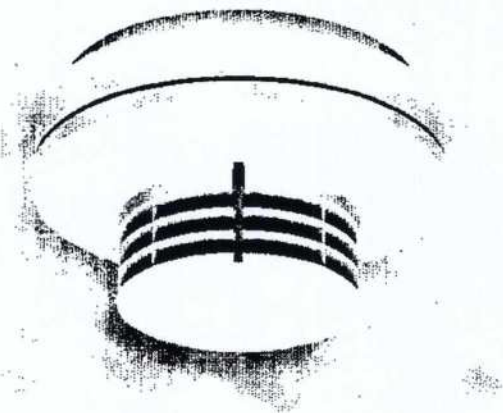
The optothermal fire detector.

FIRE ALARM

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SCHRACK
S E C O N E T

Mehrfachsensormelder MTD 533. Multiple Sensor Detector MTD 533.



Beschreibung

Der Mehrfachsensormelder MTD 533 erkennt frühzeitig Schwelbrände und offene Brände indem er sowohl die Brandkenngroße Rauch (mittels Tyndall-Prinzip) als auch Wärme (NTC-Sensor-Prinzip) detektieren und auswerten kann und ist geeignet zum Anschluss an die Integral Ringleitungstechnik.

Der Melder kann je nach Bedarf und Anwendung als Rauch-, als Temperatur-, oder als kombinierter Melder eingesetzt werden und wird jeweils entsprechend seinem Einsatzgebiet anlagenspezifisch programmiert und eingestellt.

Der MTD 533 beinhaltet einen dynamischen Alarmfilter, welcher Täuschungsgrößen erkennt und ausfiltert, 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 (CUBUS-Nivellierung).

Der MTD 533 beinhaltet 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.

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

Die Empfindlichkeit des Melders kann über Software im Rahmen der EN 54 angepasst werden.

- ein Melder für alle Anwendungen • Branderkennung erfolgt immer mittels Rauch- und Temperaturevaluierung • optimierte Rauchkammer • Speicherung aller Melderdaten und Ereignisse • dynamische Anpassung an Umgebungsbedingungen mittels CUBUS Nivellierung • 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 • all detector data and events are stored • adapts dynamically to surrounding conditions using CUBUS adaptation • 2 stage pollution detection • temperature classes conformant to EN 54 can be set • LED alarm indicator 360° visible • integrated short circuit isolator • VdS-Approved.

Description

The MTD 533 multiple sensor detector 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) and is suitable for connection to Integral loop technology.

The detector can be used as a smoke detector, as a heat detector or as a combined smoke/ heat detector as well, and is programmed and set-up specifically for the environmental conditions that it is part of.

The MTD 533 contains a dynamic alarm filter, which recognises and filters out deceptive alarms. If required, a pre-alarm can be evaluated and processed by the control panel.

To compensate for changing environmental influences, the detector adjusts itself at periodic intervals to its surroundings (CUBUS adaptation).

The MTD 533 contains a short circuit isolator, which guarantees, in the event of a wire break or short circuit that the fault on the loop is located and at the same time, the full and unrestricted function of the loop is still guaranteed.

It is recommended to use a shielded fire alarm cable, in particular in areas where there are sources of EMC disturbance continuously present, or where such disturbances might occur periodically as a result of working processes.

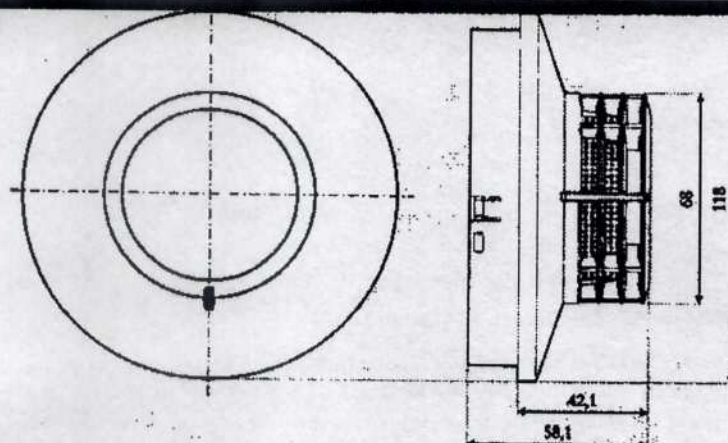
The sensitivity of the detector can be adjusted using software within the scope of EN 54.

FIRE ALARM

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SCHRACK
S E C O N E T

Dimensions



Alle Maße in mm
All dimensions in mm

Technische Daten

Betriebsspannung:	16 bis 30 VDC
Ruhestrom:	235 μ A typ./250 μ A max.
Alarmstrom:	5 mA typ./20 mA max.
Meldersockel:	USB 501-x
Funktionsprinzip:	Tyndall-Effekt und/o. NTC Sensor
Signalübertragung:	serielle Biphasse Datenübertragung, 2-Leiter-Technik, 4800 Baud
Empfindlichkeit:	nach EN 54-7 und EN 54-5 (Klassen A1, A2 und B; Index S und R)
Schutzart:	IP 44 (mit Sockel USB 501-1)
Umgebungstemperatur:	-25° bis +60°C
Rel. Luftfeuchtigkeit:	kurzzeitig o. Betauung 95% rel/F dauernd o. Betauung 70% rel/F
Luftgeschwindigkeit:	max. 20 m/s
Abmessungen mit Sockel:	Ø 118 mm, Bauhöhe: 68 mm
Gehäuse Farbe:	elektroweiß, alle RAL Farben auf Anfrage
Gehäuse Material:	ABS/PC
Gewicht:	125 g
CE-Zertifikat:	0786-CPD-20246
VdS-Zulassung:	G206106

Technical data

Operating voltage:	16 to 30 VDC
Quiescent current:	235 μ A typ./250 μ A max.
Alarm current:	5 mA typ./20 mA max.
Detector base:	USB 501-x
Principle of function:	Tyndall effect and/or NTC sensor
Signal transmission:	serial biphasse data transmission, 2-wire -technology, 4800 Baud
Sensitivity:	to EN 54-7 and 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:	short-time/ no cond. 95% rel/F permanent/ no cond. 70% rel/F
Air velocity:	max. 20 m/s
Dimensions incl. base:	Ø 118 mm, Height: 68 mm
Case colour:	electric white, all RAL colours upon request
Case material:	ABS/PC
Weight:	125 g
CE-Certificate:	0786-CPD-20246
VdS-Approval:	G206106

Further information and the technical documentation to be obtained from the technical documentation.

© Schrack Produktions - R5196-005231-EN - MTD513 - V1.3 - 12.2008
Technische Änderungen vorbehalten - subject to technical modifications

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FIRE ALARM

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SCHRACK
S E C O N E T

3 Loop Technology

3.1 Automatic Fire Detectors



Type: MTD 533
No.: FG030400

all RAL colours available
upon request

Multiple Sensor Detector MTD 533

The MTD 533 can be used as a smoke detector, as a heat detector or as a combined smoke/heat detector as well, and is programmed and set-up specifically for the environmental conditions that it is part of. The MTD 533 detects smouldering fires and open fires at an early stage by being able to detect and evaluate the characteristics of fire of smoke (by means of the Tyndall principle) as well as heat (NTC sensor principle). The detector is suitable for connection to Integral loop technology, and contains an integrated short circuit isolator, which ensures, in the event of a wire break or a short circuit, that the fault is localised and that the operation the loop circuit continues unimpeded.

- fire alarm smoke or heat, respectively smoke and heat
- smoke sensitivity and heat class can be set in accordance with EN 54
- Alarm output for external alarm indication
- Pre-alarm evaluation at 50% and at 75% of the alarm threshold level
- 2 level contamination detection
- Adjustment of alarm thresholds to compensate for environmental influences
- Alarm filter for reducing the number of deceptive alarms
- temperature-based smoke evaluation
- Software algorithm for evaluating the characteristics of the fire
- LED alarm indicator viewable from 360°
- Individual detector disablement
- Integrated short circuit isolator

Operating voltage:	16 to 30 VDC
Quiescent current:	200 µA typ.
Alarm current:	20 mA max.
Usable detector base:	USB 501-x
Function Principle:	Tyndall effect and/or NTC sensor
Signal transmission:	serial biphasic data transmission, 2 core technology, 4800 Baud
Sensitivity:	conformant to EN 54-7 and EN 54-5 (classes A1, A2, Index S and R)
Protection class:	IP 44 (with USB501-1 base)
Ambient temperature:	-25° to +60°C
Relative air humidity:	short time/without condensation 95% rel/F continuous/without condensation 70% rel/F
Permissible airflow speed:	max. 20 m/s
Dimensions without base:	diameter 118 mm, Unit height: 67.5 mm
Case colour:	pure white (all RAL colours upon request)
Case material:	ABS / PC
Weight:	125 g
CE-Certificate:	0786-CPD-20246
VdS-Approval:	G206106



Type: USB 501-1
No.: FG030126

all RAL colours available
upon request



Type: KL USB501
No.: FG030132



Type: USB 501-2
No.: FG030135

Detector base USB 501-1

Standard detector base for connecting all automatic Integral loop technology detectors. The USB 501-1 is suitable for surface mounting, with either countersunk or surface mounting possible. The detector attaches to the base via a bayonet fitting. A 6 pole terminal block is used for connecting the fire alarm cabling, and an additional 4 pole terminal block can be clipped into the dedicated snap-fit holder, if required, to form additional isolation points. Where detectors have not been fitted, it is possible to check the installation using the automatic locking mechanism which is integrated into the terminal block. The detector is attached by means of a bayonet fitting.

Areas for use:	dry and wet rooms
Installation type:	Surface mounting
Connection:	Screw-type terminals, max. 2 x 1.5mm ²
Protection class:	IP 54 (with detector fitted)
Ambient temperature:	-20° to +70°C
Relative air humidity:	short time/without condensation 95% rel/F continuous/without condensation 70% rel/F
Dimensions (including base):	diameter 118 mm, Unit height: 78 mm
Case colour:	pure white (all RAL colours upon request)
Case material:	ABS / PC, FR90
Weight:	65 g
VdS-Approval:	G204008, G 297047, G 297049

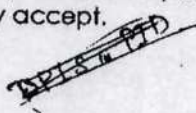
Countersunk base for fitting in cavity ceilings USB 501-2

The USB 501-2 is used to connect all Integral loop technology automatic detectors and is so constructed to allow it to be built into a standard cavity ceiling. It consists of a fitting ring with fixing clips and sleeve, a USB 501-1 standard base and a bezel ring to cover the sleeve. The fitting ring contains openings and pre-determined breaking points for feeding in the installation cable, with a 6 pin terminal block being used to connect the fire alarm cable. If required, an additional 4 pin terminal block can be fitted in the designated snap-fit holder to form additional isolation points. The bezel ring is fitted at the same time as the detector.

Areas for use:	dry rooms
Installation type:	countersunk mounting / mounting in cavity ceilings
Connection:	Screw-type terminals, max. 2 x 1.5 mm ²
Protection class:	IP 54 (with detector fitted)
Ambient temperature:	-20° to +70°C
Relative air humidity:	short time/without condensation 95% rel/F continuous/without condensation 70% rel/F
Dimensions:	diameter 158 mm, Unit height: 52.5 mm
Colour of bezel ring:	white
Case material:	ABS / PC, FR90
Weight:	100 g
VdS-Approval:	G204008, G 297047, G 297049

COMPLIANCE REPORT

General Comments:-

Sl. No.	NTPC Comments	Reply
	Doc. No PE-V0-314-552-A304, Rev.-02 : Dated:19.02.2010 DATA SHEET-INSTRUMENT HOOKUP DIAGRAM- (CAT II)	
1	5 Valve manifold to be provided for DP type pressure transmitter being used for level measurement.	As discussed .5 valve manifold is not required as the connection is flanged type at HP point.Kindly accept.
2	As press. Gauge is envisaged in place of DP gauge cum switches separate DP switches to be provide.	As discussed, only DPG is required as per NTPC norms.Kindly accept. 

Title	: TDS for Interface Module and MCP	
Project	: PRAGATI CAPP, 2x750KW	Package : Fire Protection & Detection System

A. INPUT/OUTPUT MODULE BA-OI3

1.0	Make	: Schrack Seconet
2.0	Type	: Analogue Addressable
3.0	Model No.	: BA-OI3
4.0	Operating Voltage	: 15 to 27V DC
5.0	Current consumption	: 460µA typically
6.0	Signal Transmission	: Serial data transmission, 2 wire technology
7.0	Ingress Protection	: IP-66 with case
8.0	Ambient Temperature	: (-) 20°C to (+) 60°C
9.0	Relay Output	: Bi-stable change-over contact 230V/2A (max 60 W)
10.0	Monitored inputs	: For potential-free contacts
11.0	Optocoupler input	: Querying potentially-charged signals, or external voltages of 0-30 VDC.
12.0	Case Material	: Polystyrol, halogen-free, grey RAL 7035
13.0	Dimension	: 67x67x20 mm (with case 94x94x57 mm)
14.0	Short circuit Isolator	: Integrated (built-in)
15.0	Operation/Function	: BA-OI3 is an Analogue Addressable Input-Output module which gives 1NO+1NC potential free contacts when its operates and 3 Input for switching contacts.
16.0	Approval	: VDS approved
17.0	Catalogue	: Enclosed
18.0	Inspection & Testing	: As per approved ICL
19.0	Quantity	: As per approved BOQ/Drawing

B. INPUT MODULE BA-IM4

1.0	Make	: Schrack Seconet
2.0	Type	: Analogue Addressable
3.0	Model No.	: BA-IM4
4.0	Operating Voltage	: 15 to 27V DC
5.0	Current consumption	: 460µA typically
6.0	Signal Transmission	: Serial data transmission, 2 wire technology
7.0	Ingress Protection	: IP-66
8.0	Ambient Temperature	: (-) 20°C to (+) 60°C
9.0	Monitored output	: Loads from 20Ω to 1 kΩ in 3 load ranges
a.	Maximum current output	: 1.5 A

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Title : TDS for Interface Module and MCP	
Project : PRAGATI CCPP, 2x750KW	Package : Fire Protection & Detection System

b.	Quiescent current	:	1 to 1.5 mA (can be set by jumper caps)
10.0	Case Material	:	Polystrol / grey RAL 7035 / halogen free
11.0	Dimension	:	67x67x20 mm (with case 94x94x57 mm)
12.0	Short circuit Isolator	:	Integrated (built-in)
13.0	Operation/Function	:	BA-IM4 Module is an addressable Input device which monitors 04 nos. Switching contacts.
14.0	Approval	:	VDS approved
15.0	Catalogue	:	Enclosed
16.0	Inspection & Testing	:	As per approved ICL
17.0	Quantity	:	As per approved BOQ/Drawing

C. RELAY MODULE BA-REL4

1.0	Make	:	Schrack Seconet
2.0	Type	:	Analogue Addressable
3.0	Model No.	:	BA-REL4
4.0	Operating Voltage	:	15 to 27V DC
5.0	Current Consumption	:	460μ A typically
6.0	Signal Transmission	:	Serial data transmission, 2 wire technology
7.0	Operation/Function	:	BA-REL4 is an Analogue Addressable Input-Output module which gives 4NO+4NC potential free contacts when its operate
8.0	Ingress Protection	:	IP-66 with case
9.0	Ambient Temperature	:	(-) 20°C to (+) 60°C
10.0	Relative Humidity	:	5 to 95%, without condensation
11.0	Case Material	:	Polystrol / grey RAL 7035 / halogen free
12.0	Circuit Board Dimension (LxWxH)	:	100x67x20 mm (with case 130x94x57 mm)
16.0	Inspection & Testing	:	As per approved ICL
17.0	Relay contact	:	C, NC & NO
13.0	Short Circuit Isolator	:	Integrated (built-in)
14.0	Approval	:	VDS Approved
15.0	Catalogue	:	Enclosed

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Title : TDS for Interface Module and MCP	
Project : PRAGATI CCPP, 2x750KW	Package : Fire Protection & Detection System

D – MANUAL CALL POINT

		INDOOR	OUTDOOR
1.0	Make	Schrack Seconet	Schrack Seconet
2.0	Type	Addressable	Addressable
3.0	Model No.	MCP 545-2	MCP 545-3
4.0	Colour	Red, RAL 3001	Red, RAL 3001
5.0	Operating Voltage	15 to 30V DC	15 to 30V DC
6.0	Quiescent Current	500µ A at 30V DC	500µ A at 30V DC
7.0	Alarm Current	4mA	4mA
8.0	Signal Transmission	Serial data transmission, 2 Wire technology	Transmission
9.0	Ingress Protection	IP-24	IP-55
10.0	Ambient Temperature	(-) 20°C to (+) 50°C	(-) 20°C to (+) 50°C
11.0	Case Material	Plastic reinforced with fiberglass	Plastic reinforced with fiberglass
12.0	Addressing	Soft addressing	Soft addressing
13.0	Short Circuit Isolator	Integrated (Built in)	Integrated (Built in)
14.0	Sticker Indicating "In case of Fire break Glass" shall be provided	Yes	Yes
15.0	Mounting Accessories	Mounting Case, Screws, Key.	Mounting Case, Screws, Key.
16.0	Dimension	93x66x90mm (LxBxH)	120x78x116mm (LxBxH)
17.0	Other Features	LED Alarm Indication Fault signal in the event of component failure	LED Alarm Indication Fault signal in the event of component failure
18.0	Inspection & Testing	As per approved ICL	
19.0	Quantity	As per approved BOQ/Drawing	
20.0	Approval	LPC in accordance with EN54-11, CE	LPC in accordance with EN54-11, CE
21.0	Catalogue	Enclosed	Enclosed

Client : BHEL			
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3.3 Loop modules



Type: BA-OI3
No.: EG072846

Input/Output module BA-OI3

Contains a relay output with a programmable fail-safe position, two inputs for querying potential-free contacts (either monitored or non-monitored as necessary) and an optocoupler input which can be used, if required, for monitoring external voltages. The BA-OI3 is particularly well-suited for connecting special detectors using Integral loop technology. A plastic case is used to fit the module in the loop circuit, which can be modified to accommodate different types of cable inlets (stepped nipple, cable glands etc.). Shipped including four 180 Ohm resistors for the monitored inputs.

Operating voltage:	15 to 27 VDC (from the loop circuit)
Current consumption:	460 μ A typ.
Signal transmission:	serial, 2 wire technology
Relay output:	bistable change-over contact 230 V/2 A, (max. 60 W) for potential-free contacts
Monitored inputs:	Querying potentially-charged signals, or external voltages of 0-30 VDC
Optocoupler input:	Screw-type terminals, max. 1.5 mm ² integrated
Connection:	IP 66 with case
Short circuit isolator:	-20° to +60°C
Protection class:	5 to 95% without condensation
Ambient temperature:	67x67x20 mm (with case 94x94x57 mm)
Relative air humidity:	Case:
Dimensions:	Polystyrol, halogen-free, grey RAL 7035
Case:	G204021
VdS-Approval:	



Type: BA-AIM
No.: EG072847

Branch module BA-AIM

Can be configured as a monitored input for querying potential-free contacts or as a collectively addressable detector zone (DC technology). The monitored input can, if required, be used as a "standard extinguishing interface" in accordance with VdS directives. By interconnecting a safety barrier and by using intrinsically safe detectors it is also possible to monitor hazardous areas. A plastic case is used to fit the module in the loop circuit, which can be modified to accommodate various different types of cable inlets as required. Supplied including an alarm resistor (560 Ohm) and a terminating resistor (19k1).

Operating voltage:	20 to 27 VDC (from the loop circuit)
Current consumption:	without DC branch: 500 μ A typically with DC branch: 1800 μ A typically
Signal transmission:	serial, 2 wire technology
Function:	DC branch module, monitored input
Connection:	Screw clips, maximum 1.5 mm ² integrated
Short circuit isolator:	IP 66 with case
Protection class:	-20° to +60°C
Ambient temperature:	5 to 95%, without condensation
Relative air humidity:	67x67x20 mm (with case 94x94x57 mm)
Dimensions:	Case:
Case:	Polystyrol, halogen-free, grey RAL7035
VdS-Approval:	G204052



Type: BA-IM4
No.: EG072844

Input module BA-IM4

Contains four inputs for the monitored and non-monitored querying of potential-free contacts. The operating mode can be set and is set separately for every input by means of software. The inputs are suitable for detecting switching states of longer than 330ms, and for connecting the module to the loop circuit there is a plastic case, which can, if required, be fitted with different cable inlets. Shipped including 8 pcs. 182 Ohm resistors for the monitored inputs.

Operating voltage:	15 to 27 VDC (from the loop circuit)
Current consumption:	460 μ A typically
Signal transmission:	serial, 2 wire technology
Function:	4 inputs for monitored/non-monitored querying of potential-free contacts
Connection:	Screw clips, maximum 1.5 mm ²
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:	67x67x20mm (with case 94x94x57mm)
Case:	Polystyrol, halogen-free, grey RAL7035
VdS-Approval:	G204056



Type: BA-RGW
No.: FG030170



Radio module:
Type: BA-RFM
No.: FG030171



Type: BATT FM
No.: FG030173

Radio Gateway BA-RGW for radio-linked smoke detector

The radio gateway serves as a receiver unit for all wireless fire detectors for connection into Integral loop technology and comprises of 3 components, which must be ordered separately: Radio gateway including case (FG030170), BA-RFM radio module (FG030171) and 1 pc. 9V battery (FG030173). The radio module is connected to the radio gateway's circuit board and is used to communication with the radio-linked smoke detectors. Module BA-RGW is supplied with power from a loop circuit, with the 9V battery being used for the commissioning process or for ensuring the continuity of the power supply during maintenance.

Operating voltage:	20 to 27 VDC
Current consumption:	950 μ A typically
System connection:	20 pin 2 rowed multipoint connector
Buffer battery:	9 V Lithium (operating lifetime: > 5 years)
Frequency range:	868 to 870 MHz
Transmitter power:	max. 5 mW
Detectors that can be connected:	max. 30
Range in buildings:	up to 40 metres with intervisibility
Aerial:	double integrated aerials
Protection class:	IP 54 with case
Ambient temperature:	-10° to +55°C
Relative air humidity:	5 to 95% without condensation
Dimensions:	93 x 70 x 24 mm (HxWxD)
Case:	Polystyrol, halogen-free, grey RAL7035
Dimensions case:	120 x 80 x 57 mm (HxWxD)
VdS-Approval:	G204053



Type: BA-IOM
No.: EG072842

Input/Output module BA-IOM

Contains a short circuit-proof monitored output and a galvanically isolated input, with the power supply also being internally monitored on the loop circuit for undervoltage. A plastic case is used to fit the module in the loop circuit, which can be modified to accommodate different types of cable inlets as required.

Operating voltage:	15 to 27 VDC (from the loop circuit)
Current consumption:	460 μ A typ.
Signal transmission:	serial, 2 wire technology
Function:	1 short circuit resistant monitored output, 1 optocoupler input
Connection:	Screw clips, maximum 1.5 mm ²
Monitored output:	Loads of 20 Ω to 1k Ω , 3 load ranges Maximum output current 1.5A short circuit resistant
Optocoupler input:	Quiescent current 1 to 15 mA via jumpers IN+: 0 - 30 V; input resistance: 4.9 k Ω VEXT: 0 - 30 V; input resistance: 10 k Ω max. wiring length: 1000 m each
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:	67x67x20 mm (with case 94x94x57 mm)
Case:	Polystyrol, halogen-free, grey RAL7035
VdS-Approval:	G204055



Type: BA-REL4
No.: EG072841

Relay module BA-REL 4

Contains 4 relays each containing a potential-free double-throw contact with a fail-safe, with the power supply also being internally monitored on the loop circuit for undervoltage. A plastic case is used to fit the module in the loop circuit, which can be modified to accommodate different types of cable inlets as required.

Operating voltage:	15 to 27 VDC (from the loop circuit)
Current consumption:	460 μ A typ.
Signal transmission:	serial, 2 wire technology
Function:	4 potential-free relay outputs
Connection:	Screw clips, maximum 1.5 mm ²
Relay output connection:	Screw clips, maximum 2.5 mm ²
Length of wires:	100 m max.
Short circuit isolator:	integrated
Protection class:	IP 66 with case
Ambient temperature:	-20° to +60°C
Relative air humidity:	5 to 95% without condensation
Relay output:	bistable change-over contact 230 V / 2 A
Switching power:	60 W (230 V, 0.25A)
Switching Frequency:	3.125 Hz max.
Pulse emission:	200ms- 25 s in 100 ms intervals
Dimensions:	100 x 67 x 20 mm (HxWxD) Case: 130 x 94 x 57 mm (HxWxD)
Case:	Polystyrol, halogen-free, grey RAL7035
VdS-Approval:	G204054



Red:
Type: SCHRACK MCP545-1
No.: FG030320

Yellow:
Type: SCHRACK MCP545-1Y
No.: FG030350



Red:
Type: SCHRACK MCP545-2
No.: FG030321

Yellow:
Type: SCHRACK MCP545-2Y
No.: FG030351



Red:
Type: SCHRACK MCP545-3
No.: FG030322

Yellow:
Type: SCHRACK MCP545-3Y
No.: FG030352



Red:
Type: SCHRACK MCP545-4
No.: FG030323

Yellow:
Type: SCHRACK MCP545-4Y
No.: FG030353

Manual call points MCP 545

MCP 545-x manual call points are used to manually trigger a fire alarm and are suitable for connection to Integral loop technology (Type A according to EN 54-11). The four different versions differ from one another solely in terms of their case form (IP protection class), with the electronic circuitry, connection and how they function being the same for all types. All MCP 545 units contain a short circuit isolator and a red alarm LED.

The alarm is triggered by smashing the glass panel, with the alarm remaining in alarm condition until a new glass panel is inserted. A test key for checking whether the unit is functioning properly is supplied with the unit, but the glass panel must be ordered separately.

The MCP 545-1 is suitable for use indoors and is for surface mounting. The case is fixed to the wall using two screws, whilst the points for attaching the key section must be horizontal. Cable inlets required for surface mounting must be drilled into the case as required.

The MCP 545-2 is suitable for use indoors and is fitted straight into a standard size 1 (round or square) countersunk mounting case. The distance between the holes for attaching screws is 60 mm, and must be horizontal.

The MCP 545-3 is suitable for use outdoors (IP55) and is for surface mounting. Cables are fed in from below using an M20 cable gland. The detector case is fixed to the wall using four screws.

The MCP 545-4 is also suitable for use outdoors and is for surface mounting. The detector is IP 67 (waterproof); with the cables being fed in from above or below using an M20 cable gland. The detector case is fixed to the wall using three screws.

Operating voltage:	15 to 30 VDC
Quiescent current:	500 µA at 30 VDC
Alarm current:	4 mA
Connection:	Screw clips, maximum 1.5 mm ²
Signal transmission:	serial, 2 wire technology
Protection class:	MCP 545-1/2: IP 24 MCP 545-3: IP 55 MCP 545-4: IP 67
Ambient temperature:	-20° to +50°C
Case colour:	red RAL 3001, yellow RAL 1003
Case material:	Fibreglass reinforced plastic
Weight:	MCP 545-1/2: 160 g/110 g MCP 546-3/4: 370 g/330 g
Approval:	LPC in accordance with EN 54-11, CE

Replacement parts & accessories

	Type	No.
Glass panel	DKM K GLAS	FG030328
Circuit board (replacement part)	DKM LPL MCP545	FG030340
Back panel for surface mounting	DKM K IP24 UT	FG030332
Plastic panel (instead of glass panel)	DKM K GLAS RESET	FG030333
10 pcs replacement test key	DKM K SCHL	FG030329
Transparent cover	DKM K ABDECK	FG030330
Cover seal	DKM K PLOMB	FG030331

Title : TDS for Fire Alarm Panel and Repeater Panel	
Project : PRAGATI CCPP, 2x750KW	Package: Fire Detection & Protection System

A.0 FIRE ALARM PANEL

A.1	Main Fire Alarm Panel	
1.0	Make	: Schrack Seconet
2.0	Type	: Analogue Addressable
3.0	Model No.	: B5-SCU-C
4.0	Supply Voltage	: 230V AC 47-63 Hz
5.0	Operating Voltage	: 26.3V DC to 28.3V DC
6.0	Colour	: Red RAL 3000
7.0	Ambient Temperature	: 0°C to (+) 50°C
8.0	Atmospheric Humidity	: 5 – 95% without Condensation
9.0	Ingress Protection	: IP-30 (In Accordance with DIN 40050)
10.0	Features	: Modular : 100% Redundant
		: DE-Activation of Individual Detector : Bi-Directional Data Transmission
		: Recognition of Dirty Detectors
11.0	Alarm Annunciation Detail	: FAP will annunciate all Alarms & Trouble conditions
12.0	Type of Communication	: The communication between Panels is peer to peer. The data from one Panel can be passed to other Panel.
13.0	Number of Panels	: 01 No.
14.0	Location of Panels	: FAP#1 LOC : Central Control Room
15.0	Process word length	: There are two Nos. of 32 bit processors in the Fire Alarm Panels
16.0	Type of Mounting	: Wall Mounting
17.0	Inspection & Testing	: As per approved ICL
18.0	Dimension	: 600x445x225mm (HxWxD)
19.0	Material of Construction	: Sheet Steel Cabinet
20.0	No. of Loops including Device per loop	: Max. 10 Loops & 128 Device per Loop
21.0	Battery details	:
21.1	Manufacturer	: EXIDE/AMRON
21.2	Country of origin	: India
21.3	Type	: SMF Lead Acid Batteries
21.4	Output rate	: 24V DC (12V DCx2) 42 AH
21.5	Quantity	: 2 Sets (01 Main & 01 Standby)
21.6	Battery back-up time	: 12 hours standby & 20 minutes in Alarm
Client : BHEL		
Doc. No. : PE-V0-314-552-A041		
	Rev.	Schedule Date
	1	19.08.2009
		Sheet No.
		2 of 3

Title : TDS for Fire Alarm Panel and Repeater Panel		
Project : PRAGATI CCPP, 2x750KW	Package: Fire Detection & Protection System	

			Mode
22.0	Battery charger	:	Inbuilt with FAP
23.0	Catalogue	:	Enclosed
24.0	Approval	:	VDS

B. REPEATER PANEL

1.0	Make	:	Schrack Seconet
2.0	Type	:	Analogue Addressable
3.0	Model No.	:	B3-MMI-CIP
4.0	Operating Voltage	:	10 to 30V DC
5.0	Quiescent Current	:	20Ma
6.0	Data Transmission	:	MMI-BUS (galvanically isolated RS485)
7.0	Protection Class	:	IP-30
8.0	Ambient Temperature	:	0°C to (+) 50°C
9.0	Case Colour	:	Red RAL 3000
10.0	Type of Mounting	:	Wall
11.0	Type of Display and its Features	:	4 Line x 20 Characters LCD Type
12.0	Location of Panels	:	Fire Station
13.0	Max. Circuit Length	:	Max. 1.2 KM
14.0	Inspection & Testing	:	As per approved ICL
15.0	Dimension	:	230x445x35mm (HxWxD)
16.0	Material of Construction	:	Sheet Steel Cabinet
17.0	Catalogue	:	Enclosed
18.0	Quantity	:	1 No.
19.0	Approval	:	VDS

Client : BHEL			
Doc. No. : PE-V0-314-552-A041	Rev.	Schedule Date	Sheet No.
	1	19.08.2009	3 of 3

Types of Integral subcontrol units



Type: B5-SCU
No.: FG052100

Integral Cabinet B5-SCU

Basic version of Integral cabinet, door without operating panel cutaway.

Basic version consisting of:

- Sheet steel cabinet
- B5-MCU master control unit
- B5-PSU power supply unit
- Module rack with BUS circuit boards
- Power clips und battery cable
- Space for batteries (max. battery size 2 x 12 V/45 Ah)

Input voltage / frequency:	230 VAC +15%/-20% 47-63 Hz
Input power:	350 W
Output voltage:	26.3 VDC (+50°C) to 28.3 VDC (0°C)
Output current:	7.5 A
Quiescent current:	74 mA (without operating panel and without printer)
Batteries that can be used:	2 pcs 12 V / 38...40 Ah in series
Emergency power supply with batteries:	72 hours normal operation + 0.5 h alarm
Protection class:	IP 30 (acc. to DIN 40050)
Ambient temperature:	0° to +50°C
Relative air humidity:	5 to 95%, without condensation
Air pressure:	≥ 80 kPa, up to 2,000 m above sea level
Case:	sheet steel, red RAL 3000
Dimensions:	600 x 445 x 225 mm (HxWxD)
Weight of basic version:	15 kg (without batteries)
Weight per battery:	15 kg



Type: B5-SCU-C
No.: FG052101

Integral Cabinet B5-SCU-C

Basic version of the Integral cabinet, but also with

- Cutaway for built-in operating panel

The operating panel must be ordered separately.



Type: B5-SCU-CP
No.: FG052102

Integral Cabinet B5-SCU-CP

Basic version of the Integral cabinet, but also with

- Cutaway for built-in operating panel
- built-in log printer

The operating panel must be ordered separately.



Type: B5-SCU-CP-EAT32
No.: FG052107

Integral Cabinet B5-SCU-CP-EAT32

Basic version of the Integral cabinet, but also with

- Cutaway for built-in operating panel
- built-in log printer
- LED indicator panel for indication of alarm, fault and disablement states for 32 detector zones

The operating panel must be ordered separately.

2.2 Integral C

The Integral C fire alarm control panel is a cost-optimized fire alarm control panel for deployment in small systems. In the basic system layout, a maximum total of 256 devices can be connected to 2 loop circuits, in addition to interfaces for connecting external operating panels, floor plan panels, fire brigade control panels etc. Furthermore, it possesses an interface, which can be used for either connecting an extra two loop circuits, a universal interface module (for incorporation in subcontrol unit loops, networks or for connection to management systems etc.) or an input/output module.

The same commissioning and setting tools can be used as for the Integral system. Furthermore, with the exception of the high end operating panels, all devices described in the chapter "Indicator panels and operating panels" can be connected.

The Integral C is available with three different types of case, which differ from one another only in terms of the layout of their doors. The back wall, master processor unit, case etc. are identical in all types of Integral C sub-control unit.

It is suitable and approved in accordance with standard for controlling a single extinguishing zone in its form as SLZ Integral C extinguishing system control panel.

Summary of main features

- Mikroprozessorgesteuerte und überwachte Systemtechnik
- Microprocessor-controlled and -monitored system technology
- Software redundancy: the control panels Integral C and Integral C1 (from SW V 6.1) fulfill the requirements concerning redundancy of the operating software in accordance with the technical regulation TRVB S 123, Annex 6/1, 2.2.
- Constant automatic testing routines for all system components and programs
- Simple connection of components using a flat connection
- Up to 8 display and operating panels can be remotely connected per subcontrol unit, each with alphanumeric descriptions in full text, with a 4 line, 20 characters per line display, with a freely selectable language
- Serial data protocol printer, with emergency power supply, with event memory and announcement filter
- Suitable for connection to the firebrigade's public alarm system
- Can be connected to hierarchically superior computer systems or fire alarm control systems via serial data
- interfaces with full functionality (detector and command controlling)
- Fully redundant interconnection of up to 16 Sub Control Units, without the presence of a hierarchically superior central processor
- Networking of an almost infinite number of fire alarm control panels (even retrospectively)
- Data transmission between Sub Control Units occurs via a (double) redundant loop circuit
- Display panels and operating panels, protocol printers, parallel panels and other system components are connected with one another via digital communications circuits, and can be used in any desired combination regardless of their physical location
- The system complies with or exceeds the following relevant standards and guidelines: EN 54, ÖNORM, DIN, ÖVE, VDE, and many more.

Approvals

- VdS approvals: G200081, S200081, G206045, G206055, S206055
- CPD-Certificate No.: 0786-CPD-20239 (VdS)
- Austrian testhouse „Prüfstelle für Brandschutztechnik“: No.: FT 14/170/7/96, FT 14/171/7/96
- VB Cert Austria: No. 002/BM-PSys/008, 002/BM-PSys/009, 002/BM-PSys/010
- Country-specific approvals in Austria, Germany, Denmark, Italy, Croatia, Netherlands, Poland, Romania, Russia, Sweden, Switzerland, Slovakia, Czech Republic, Turkey, Ukraine, Hungary, etc.

Integral C as a controller unit for single zone extinguishing systems

Automatic electronic control and delay mechanisms (=EST) are used to control stationary fire extinguishing systems. By using the B6-X2-CP1L cabinet, the Integral C system can also be used as an »Electronic control and delay mechanism« for controlling single zone extinguishing systems in accordance with standards, and in this form conforms to the requirements of the standards and regulations EN12094-1 and VdS 2496.

The BLZ/SLZ Integral C is suitable and approved for controlling and monitoring of the following fire extinguishing systems:

- CO² - high pressure extinguishing systems where life is or is not endangered
- CO² - low pressure extinguishing systems where life is or is not endangered
- Inert gas and argon extinguishing systems where life is or is not endangered
- Water spray systems
- Pre-action sprinkler systems
- Sprinkler Systems
- Mist water deluge systems
- Chemical extinguishing systems

2.4 Display panels & Operating panels

All external operating panels and devices in the Integral system whose device descriptor contains the letters "MMI" are connected via the "MMI BUS" and can therefore be connected to all Integral, Integral C and Integral C1 control panels. The only exceptions are the B5-MMI-HCIP and B5-MMI-HCPP high-end operating panels, which can only be connected to Integral subcontrol units.

The interface for connection the MMI BUS can be found on module B5-BAF for the Integral control panel and on the master control unit (B4-BCUA2E or B4-BCUA1E respectively) for the Integral C and Integral C1 control panels.

The external BMZ Integral operating panels B3-MMI-CIP and B3-MMI-CPP, as well as both high end operating panels B5-MMI-HCIP and B5-MMI-HCPP are available in a wide range of languages (both the legend on the membrane keypad and the menus on the display). The order numbers listed below refer to the German language version, and other languages are available on request.



Type: B3-MMI-CIP-D
No.: FG050200

External operating panel B3-MMI-CIP

External operating panel with menu-based operation, including a case, membrane keypad, four line LCD display for indicating all system states in plain text and a controller module.

Operating voltage:	10 to 30 V
Quiescent current:	20 mA
Data transmission:	MMI-BUS
electrical:	galvanically isolated RS 485
Protocol:	serial, DIN 19244-3
Distance to Subcontrol unit:	max. 1,200 m
Protection class:	IP 30
Ambient temperature:	0° to +50°C
Dimensions:	230 x 445 x 35 mm (HxWxD)
Case colour:	red RAL 3000



Type: B3-MMI-CPP-D
No.: FG050300

External operating panel with printer B3-MMI-CPP

External operating panel with menu-based operation, including a case, membrane keypad, four line LCD display for indicating all system states in plain text, a controller module and integrated serial data log printer.

Operating voltage:	10 to 30 V
Quiescent current:	20 mA
Data transmission:	MMI-BUS
electrical:	galvanically isolated RS 485
Protocol:	serial, DIN 19244-3
Distance to Subcontrol unit:	max. 1,200 m
Protection class:	IP 30
Ambient temperature:	0° to +50°C
Dimensions:	360 x 445 x 45 mm (HxWxD)
Case colour:	red RAL 3000

MANUFACTURERS NAME & ADDRESS				QUALITY ASSURANCE PLAN										PROJECT					
M/s. SCHRACK Limited				Item: Fire Alarm System (Imported)				QP No. : 9472-001-QVE-Q-424				PROJECT : 2 x 750 MW, Pragati III, Combined Cycle Project							
				Sub-System : Fire Detection and Protection System				DATE : 14/10/2009 PAGE : 02 of 02				PACKAGE : FIRE PROTECTION SYSTEM							
CHARACTERISTICS				CLASS		TYPE OF CHECK		EXTENT OF CHECK		REFERENCE DOCUMENT		ACCEPTANCE NORMS		FORMAT OF RECORD		AGENCY		REMARKS	
3				4		5		6		7		8		9		10		11	
1	2																		
1	Fire Alarm Panel	Check for type, Model		MA		Visual		100%		As per apprd.		Approved Drg.		MTC		P		V	
2	Smoke Detector	—do—		MA		Visual		100%		—do—		—do—		—do—		P		V	
3	Heat Detector	—do—		MA		Visual		100%		—do—		—do—		—do—		P		V	
4	Manual Pull Station	—do—		MA		Visual		100%		—do—		—do—		—do—		P		V	
5	Inter Face Module	—do—		MA		Visual		100%		—do—		—do—		—do—		P		V	

NOTES:		LEGEND :		FOR NTPC USE	
P = Perform , W = Witness, V = Verification		M C N		MANUFACTURER BHEL/NTPC	
DATE : 14/10/2009					
SIGNATURE		CONTRACTOR		REVIEWED BY	

