










N SAFETY

N

	Safety rope switches	N-3...4 N-11	Idem Lovato
	Conveyor belt switches	N-5	Idem
	Tongue operated switches	N-6	Idem
	Safety switches	N-7 N-10	Idem Reer
	Safety light curtains	N-8	Reer
	Safety controller/ Relays	N-9...10	Reer
	Safety lockout hasps	N-12	EM
	Surge protection devices (SPDs)	N-13...14 N-15...16	CPT Dehn
	Smoke detectors	N-17	EM

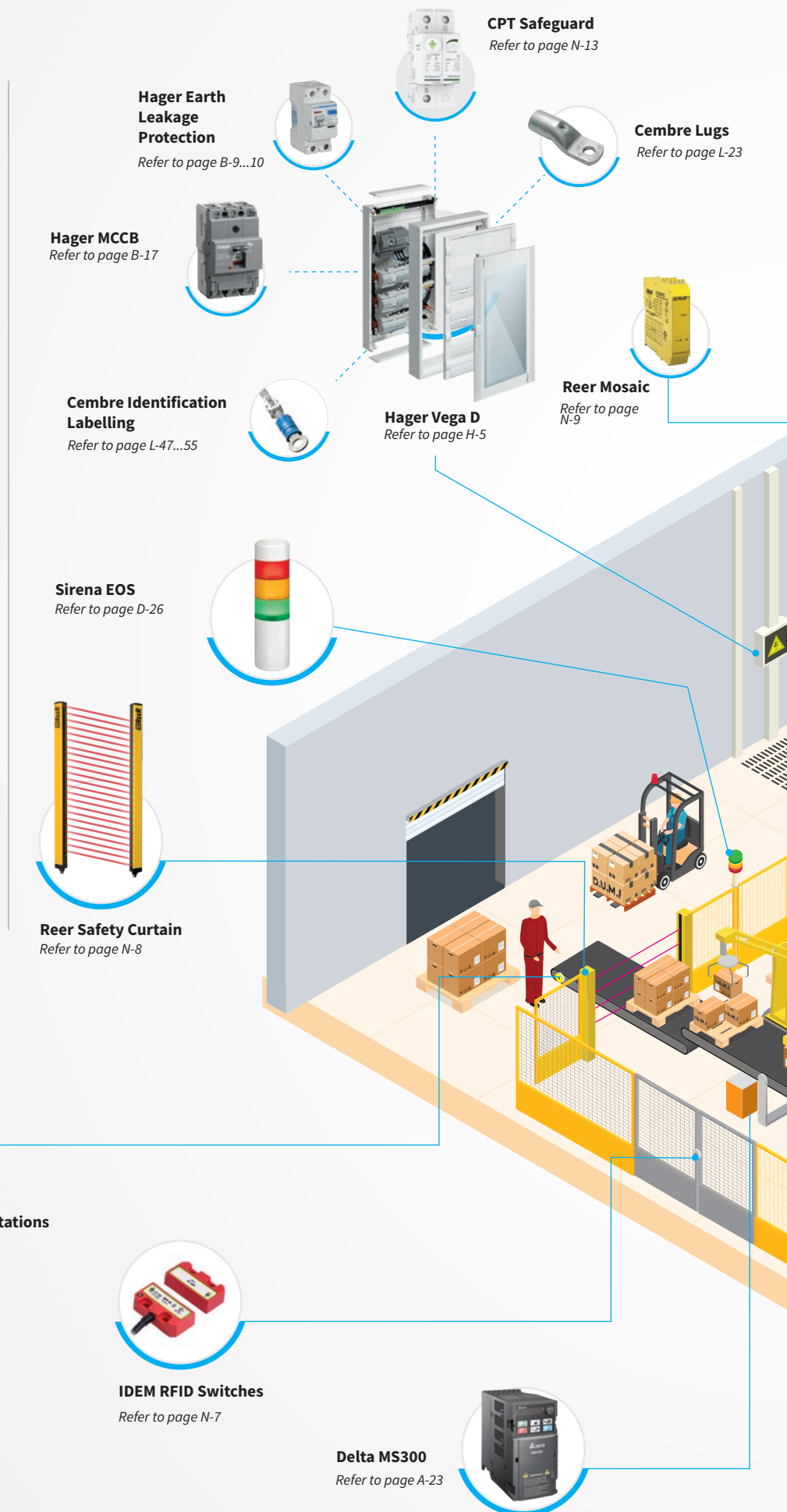
Safety Solutions

According to the South African Occupational Health and Safety Act No. 85, 1993,

“Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees...the safety and absence of risks to health in connection with the production, processing, use, handling, storage or transport of articles or substances.”

Our safety product portfolio is designed for both human and machine safety.

We have carefully sourced a wide range of products and solutions from leading manufacturers across the globe to provide our customers with reliable technology to increase safety and productivity.





Sirena Siren
Refer to page D-31



Hager Quadro
Refer to page H-7...11



Lovato Pushbutton Stations
Refer to page D-9



Sirena Traffic Light
Refer to page D-28



IDEM Safety Rope
Refer to page N-3



MD Muting Sensor
Refer to page K-6



Lovato Limit Switches
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Delta HMIs
Refer to page C-17

Guardian line series - Safety rope switches

All IDEM safety rope emergency stop switches conform to **ISO13850 (EN418)** and **EN60947-5-5** standards. They provide positive mechanical linkage between switch contacts and the wire rope as per **EN60947-5-1**. Pre-tensioning the rope using a tensioner/gripper device, clamps the rope and hooks onto the switch eyebolt. Correct tension is observed through the indicator window on the switch, once tensioned, switch contacts can be set to operational condition (*safety contacts closed, auxiliary contacts open*) by pressing the blue reset button on the switch cover.

All Safety rope switches incorporate wire-breakage monitoring, pulling or breakage of the rope, positively opens safety contacts closing auxiliary contacts, mechanically latching the switch which can only be returned to the operational condition by pressing blue reset button as required by ISO13850. ATEX versions available on request.

- Rugged die-cast metal body (painted yellow) or stainless steel 316
- Enclosure protection: IP67, IP69K (stainless steel versions)
- Ambient temperature: -25...+80°C
- Typical operating force: <125N (<300 mm deflection)
- Mechanical life: 1.000 000
- Thermal current (Ith): 10A
- Rated insulation voltage: 500V
- Spare replacement lid: With or without LED (*available on request*)
- Standards: EN60947-5-1/-5-5, EN62061 (*up to SIL3*), UL508, ISO13850, ISO13849-1 (*up to PLe*)



141029...

type	contacts		mounting position	max. protection length		LED indication	price
	NC	NO		1 switch	2 switches		

GLH series - Heavy duty safety rope switches

Heavy duty safety rope pull switch protect long conveyor lengths. Robust housings survive indoor or outdoor use including washdown (*IP67 rating*). Lengths over 2 km can be achieved with less than 20 switches, shorter rope spans up to 200m can be achieved using just one switch providing a cost effective solution.

Robust housings survive indoor and outdoor use, including washdown to IP67 and (*IP69K on stainless steel versions only*).

- Rope span (per switch): 100m (*single head*) - 200m (*dual head*)
- Mounting / position: 4 x M5 / any position
- Cable/conduit entry: 4 x M20 cable entries

Note: Optional bi-colour LED indicates switch status from a distance
 Indication of rope status: Steady - Green = machine running
 Flashing - Red = machine stopped

GLH - Die-cast housing

	contacts		mounting position	max. protection length		LED indication	price
part number	NC	NO		1 switch	2 switches		
141041	4	2	centre	200m	250m	–	5 252.22
141029*	4	2	centre	200m	250m	•	6 336.70
141037	4	2	left	100m	125m	–	2 955.60
141053*	4	2	left	100m	125m	•	3 347.76
141038	4	2	right	100m	125m	–	2 955.60
141054*	4	2	right	100m	125m	•	3 347.76

GLH-SS - Stainless Steel 316 housing

	contacts		mounting position	max. protection length		LED indication	price
part number	NC	NO		1 switch	2 switches		
145025	4	2	centre	200m	250m	–	7 474.09
145029*	4	2	centre	200m	250m	•	3 347.76
145037	4	2	left	100m	125m	–	5 851.39
145053*	4	2	left	100m	125m	•	6 442.51
145038	4	2	right	100m	125m	–	5 851.39
145054*	4	2	right	100m	125m	•	6 442.51

* LED indication - provide voltage requirement by adding following to end of part number:
 A = 24 VDC / B = 110VAC / C = 230 VAC

Accessories - For rope operated switches

Accessories - Rope tensioner/gripper (quick fixing) - for rope operated switches

type	description	length (mm)	material	price
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Tensioning of the rope is achieved using IDEM's patented tensioner/gripper accessory. Traditional turnbuckle/clamp systems are difficult to tension and adjust, requiring frequent re-tensioning or maintenance, making viewing of the switch tension window difficult.

IDEMs tensioner/gripper accessory offers greater reliability, significantly reducing installation time by offering an eyehook, tensioner thimble and high strength gripper in one assembly, enabling rapid connection to the switch eyebolts with fast accurate tensioning of the rope while in close proximity to the viewing window of the switch.

140020	rope tensioner/gripper for rope switches	190...248	galvanised	907.38
140019	rope tensioner/gripper for rope switches	190...248	stainless steel	1 416.85
140044	red emergency-stop mushroom pushbutton		twist release	385.27
140140	red SS emergency-stop mushroom pushbutton		twist release	963.74



141053...



141054...



145025



140044



GLS series - Standard duty safety rope switches

Guardian Line – General / standard duty safety rope switch is suitable to protect conveyor lengths up to 80m using two switches or 60m using a single switch. An emergency stop button can be fitted on either side, offering a traditional emergency stop function on the switch.

An optional bi-colour LED is also available to indicate the switch status from a distance. Rugged internal sealing and a robust LED lens permits the use of high pressure hosing, suitable for indoor and outdoor use.

- Rope span (*per switch*): 60m (*single switch*) - 80m (*dual switch*)
- Cable/conduit entry: 3 x M20 cable entries

type	contacts		mounting position	max. protection length		description	LED indication	price
	NC	NO		1 switch	2 switches			
GLS Die-cast housing (IP67)								
142052	2	2	left/right	60m	80m	rope switch	–	2 535.83
142058*	2	2	left/right	60m	80m	rope switch	•	2 925.70
GLS-SS Stainless steel 316 housing (IP69K)								
144003	2	2	left/right	60m	80m	rope switch	–	4 807.16
144009*	2	2	left/right	60m	80m	rope switch	•	5 391.37

* LED indication - provide voltage requirement by adding following to end of part number:
 A = 24 VDC / B = 110VAC / C = 230 VAC

GLM series - Mini duty safety rope switches

Compact, robust die-cast safety rope pull switch to protect short conveyor lengths up to 50m using two switches or 30m using a single switch, providing a reliable, cost-effective safety solution for conveyor systems. An emergency stop button can be fitted to the side of the switch to offering a traditional emergency stop function close to the switch.

143001	2	1	left/right	30m	50m	rope switch	–	2 056.27
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Mounting accessories for rope operated switches

type	description	length (mm)	material	price
140020	rope tensioner/gripper for rope operated switches	190...248	galvanised	907.38
140019	rope tensioner/gripper for rope operated switches	190...248	stainless steel	1 416.85
140021	universal pulley for rope operated switches	77 mm	stainless steel	607.22
140064	universal pulley for rope operated switches	77 mm	galvanised	404.82
140045	standard eyebolt for rope operated switches (8 pack)	84 mm	stainless steel	624.47
140046	standard eyebolt for rope operated switches (8 pack)	84 mm	galvanised	331.22
140099	roller eyebolt with nuts (non adjusting)	71 mm	die cast metal	602.62
140048	roller eyebolt with nuts (adjustable)	107-140 mm	die cast metal	772.83
140047-S	pigtail eyebolt (short) M10 46mm thread (1 /pack)	114 mm	stainless steel	90.86
140043	safety spring for rope operated switches	220 mm	stainless steel	416.32
140165♦	mounting brackets for rope op. switches (1 /pack)	127 mm	stainless steel	295.56
140059	anti-tamper screwdriver for rope operated switches	T20	–	48.31

♦ Note: GLM and GLS series can be mounted using one bracket. GLHD needs two.

Steel cable (polypropylene covered) for rope operated switches

4.0 mm outside diameter. steel inner - polypropylene cover

140037	insulated steel cable for rope operated switches	30m	steel/PVC	929.23
140038	insulated steel cable for rope operated switches	50m	steel/PVC	1 282.30
140040	insulated steel cable for rope operated switches	100m	steel/PVC	2 225.32
140068	insulated steel cable for rope operated switches	500m	steel/PVC	7 531.59

Rope kits for rope operated switches

Rope kits comprise: tensioner/gripper assembly + allen key, quick link (up to 50m), length rope terminated one end and No. eyebolts required for length of rope

type	length	description	No. of eyebolts	tension/gripper	price
140004	20m	rope kit for rope operated switches	9	1 + QL	2 134.47
140005	30m	rope kit for rope operated switches	12	1 + QL	2 412.78
140006	50m	rope kit for rope operated switches	20	1 + QL	2 877.40
140007	80m	rope kit for rope operated switches	30	2	3 210.91
140008	100m	rope kit for rope operated switches	37	2	3 485.76
140009	126m	rope kit for rope operated switches	45	2	3 858.38

E-stop and contact blocks (spare) for rope operated switches

140044	emergency-stop mushroom pushbutton			red	twist release	385.27
140057	2	1	3 pole	contact block for rope operated switch		348.47
140061	2	2	4 pole	contact block for rope operated switch		439.32
140062	3	1	4 pole	contact block for rope operated switch		439.32
140063	4	–	4 pole	contact block for rope operated switch		439.32



Conveyor belt alignment switches

Conveyor belt alignment switches are mounted on sections of plant conveyors to protect against excessive belt drift due to unintentional movement. Should the belt position drift, the roller arm of the switch will move to a pre-determined position causing activation of a control circuit providing positively opening NC safety contacts (to **EN60947-5-1**) at the point of tripping.

2 internal contact blocks, one to provide a **“WARNING”** signal the other to provide a **“STOP”** signal.

Rugged die-cast metal body (*painted yellow*) or Stainless Steel 316

Switching range: "Warning" signal 10...18°C (factory setting 14°C)
 "Stop" signal 15...35°C (factory setting 25°C)
 Operating torque: Medium duty 1.8Nm...2.8Nm (factory setting 1.8Nm)
 Heavy duty 3.0Nm...5.0Nm (factory setting 3.0Nm)

- Enclosure protection: IP67 - IP69K (*in stainless steel*)
- Ambient temperature: -25...+80°C
- Vibration resistance: 10-500Hz 0.35 mm
- Shock resistance: 11ms 15g
- Mechanical life: 150.000 operations
- Thermal current (Ith): 10A
- LED indication: Available on request
- Standards: EN60947-5-1, EN620
- Spare replacement lid: With or without LED (*available on request*)

type	contacts		roller dimensions		factory settings			duty	price
	NC	NO	∅	length	torque	warning	stop		

Python line series - Conveyor belt alignment switches

- Cable/conduit entry: 4 x M20 cable entries

Die-cast (*painted yellow*) housing

500001	2	2	35 mm	120 mm	1.8Nm	14°C	25°C	medium	7 375.28
500005	2	2	35 mm	230 mm	3.0Nm	14°C	25°C	heavy	7 546.54

Stainless steel 316 housing

501001	2	2	35 mm	120 mm	1.8Nm	14°C	25°C	medium	9 524.60
501005	2	2	35 mm	230 mm	3.0Nm	14°C	25°C	heavy	10 456.13

HLM-CBA series - Mini belt alignment switches

- Heavy duty die cast bodies (*painted red*)
- High mechanical life over 500.000 cycles
- Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508

174401	2	2	22 mm	70 mm	1.10Nm			plastic roller	2 999.30
174451	2	2	22 mm	70 mm	1.40Nm			stainless steel roller	3 677.82

Emergency stop stations

IDEM's emergency stop switches provide robust emergency stop protection for machines and exposed conveyors. They are suitable for use within all industry sectors.

- Yellow Polyester (*IP67*) or stainless steel 316 body (*IP69K*)
- Safety trip mechanism opens safety contacts if lid removed - extra degree of anti-tamper
- Button protection shroud version with padlock holes to enable "Lock Off"
- 3 and 4 pole contact blocks provide positively operated switch contacts
- ATEX versions available on request

Ambient temperature: -25...+80°C
 Mechanical life: 1.500.000 operations
 Thermal current (Ith): 10A
 Cable/conduit entry: 2 x M20 (*3-pole*) / 3 x M20 (*4-pole*)
 Standards: EN60947-5-1, EN60947-5-5, EN62061 UL508, ISO13850, ISO13849-1

Polyester housing (*IP67*)

230001	2	1						plastic (<i>polyester</i>) emergency stop station	608.37
230003	2	1						plastic (<i>polyester</i>) emergency stop station with button shroud	731.43

Stainless steel housing (*IP69K*)

231001	2	1						stainless steel E-stop station	2 635.89
231005	2	1						SS E-stop station with button shroud	2 793.44
232019*	3	1						SS E-stop station with dual colour LED	3 429.41
232023*	2	2						SS E-stop station dual colour LED/button shroud	3 416.76
232025*	3	1						SS E-stop station dual colour LED/button shroud	3 586.97
232023-AS	2	2						SS E-stop station dual colour LED (<i>steady</i>)/button shroud	3 416.76

* Please provide voltage requirement by adding following to end of part number:
 A = 24 VDC / B = 110 VAC / C = 230 VAC



140107

new

200007-SS



208007



140111

202001-SS



205001



140108



140110

Tongue operated switches (connects to most safety relays)

IDEM tongue operated safety interlock switches fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and a tamper resistant (*not easily defeatable*) key mechanism. Used independently to provide positively operated contacts to **EN60947-5-1** or in combination with any dual channel safety monitoring relays to provide up to category **4 PLe ISO13849-1**.

The switch is mounted to the frame of the guard or machine, and the actuator profile is fitted to the moving part (*frame*) of the guard and aligned to match a cam mechanism within the switch entry aperture, providing a positively operated (*not easily defeatable*) interlock switch. Inserting the actuator into the switch closes the safety contacts enabling the machine start circuit. Withdrawing the actuator positively opens the safety contacts.

Positive break contacts to EN60947-5-1 High functional safety to ISO13849-1

- Actuators for switches ordered separately (see accessories section below)
- Cable/conduit entry: 3 x M20 cable entries

type	No. entry	contacts		description	dimensions (mm)			price
	positions	NC	NO		(H)	(W)	(D)	

Type KP - Kobra tongue operated switches (non-locking)

KP and K-SS switches provide industry standard fixing points and a rotating head for up to 4 actuator entry positions. The double seal gasket and stainless steel internal screws reduce the likelihood of rust build up inside the switch. IDEM's patented CAM system ensures long term reliability, even under harsh environmental conditions.

- Enclosure protection: IP67 - rugged polyester body with stainless steel head
- Ambient temperature: -25...+80°C
- Thermal current (Ith): 10A
- Rated Ins/withstand voltage: 500 VAC/2500 VAC
- Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508

200007-SS	4	3	1	tongue operated switches	98	58	34.5	1 161.54
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Type K-SS stainless steel tongue operated switches

- Enclosure protection: IP69K - rugged stainless steel 316 body

208007	4	3	1	SS tongue operated switches	98	58	37.5	2 539.28
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KLM series - Guard locking switch (Metal)

Solenoid locking interlock safety switch featuring Guard Holding up to 3000N (300Kg) (F1Max)

KLM guard locking safety switches have rugged die cast housings with a high holding force of 3000N to keep medium/large guard doors closed until hazards are removed. The slim profile is designed to fit on 50 mm frame sections or where space is restricted. The head rotates providing up to 8 actuator entry positions. 2 independent contact blocks individually monitor lock and door status. Internal switch selectable for power feed to LED or as a voltage free auxiliary circuit to indicate lock status.

- Enclosure protection: IP67 - Rugged polyester body with stainless steel head
- Solenoid supply voltage: 24 VAC/DC or 230 VAC (available in 110 VAC on request)
- Ambient temperature: -25...+50°C
- Thermal current (Ith): 10A
- Rated Ins/withstand voltage: 500 VAC/2500 VAC
- Manual release: 1 manual release

202001-SS	8	3	1	locking interlock safety switches	24 VDC	176	46	47	4 304.59
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202007-SS	8	3	1	locking interlock safety switches	230 VAC	176	46	47	4 382.79
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KL3-SS series - Stainless steel tongue operated switches

In accordance with EHEDG (*European Hygienic Engineering & Design Group*) guidelines for hygienic design, mirror-polished surface to Ra10 designed to cope with direct food splash and cleaning in tough applications of food processing industries.

IP69K enclosure protection permits high pressure hosing with detergent at high temperature.

- Enclosure protection: IP69K – Mirror polished 316 stainless steel

205001	8	3	1	locking interlock safety switches	24 VDC	177	48	47	8 208.96
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205007	8	3	1	locking interlock safety switches	230 VAC	177	48	47	8 305.56
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Accessories for above tongue operated switches

140123	–			manual release key (<i>front and side</i>) for					276.01
140107	standard			standard actuator only					127.66
140108	flat			flat actuator only					127.66
140110	flexible			die-cast heavy duty flexible actuator only					457.72
140111	flexible			stainless steel heavy duty flexible actuator only					914.28



RFID coded non-contact safety switches 24 VDC SIL 3 - SILCL 3 - PLe - Cat. 4

RFID non-contact safety sensors provide highly-reliable, tamper-proof personnel protection for monitoring protective doors, gates and guards, they uniquely identify passive RFID transponders ensuring high coding levels and effective protection.

- Master coded:** The actuator is free and not specifically assigned to the sensor
Unique coding: Factory programmed and permanently assigned to sensor during set-up
- Output: 2 NC safety outputs and 1 NO auxiliary output
 - Connection type: M12 connector - (Pigtail M12/8-pin - 250 mm), see page **K-23/24**
 - High EMC immunity and IP67/IP69K protection ensure excellent reliability in harsh environments.
 - Resistant to aggressive media, e.g. cleaning agents used in the food and packaging industry

type	model	sensing distance	circuits	description	dimensions (mm)			price
					(H)	(W)	(D)	

RFID safety switches *supplied as sensor/actuator combination*

SPF - universal (22 mm fixing centres)

405104	SPF	14 mm	2NC/1NO	RFID coded safety switch	50	25	13	2 640.49
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LPF - European industry standard fitting (78 mm fixing centres)

404104	LPF	14 mm	2NC/1NO	RFID coded safety switch	88	25	13	2 688.79
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Coded non contact safety switches 24 VDC

IDEM coded non contact safety switches, enable conformance to **EN60947-5-3** to be used as directed by **ISO12100**, **ISO14121** and **EN60204-1**.

They have coded magnetic sensing providing a wide sensing distance and high tolerance to misalignment after sensing. Used in combination with most dual channel safety monitoring relays they can be used to provide up to PLe to **ISO13849-1**.

- Compact and robust high specification polyester housing
- Visual LED switch status indication (*on coded version only*)
- Coded magnetic operation – Tamper resistant.
- Supplied as sensor/actuator combination

MPC - Miniature industry standard (22 mm fixing centres)

114104	MPC	14 mm	2 NC	compact coded safety switches	36	26	13	2 688.79
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LPC - European industry standard fitting (78 mm fixing centres)

110004	LPC	14 mm	2 NC	rectangular coded safety switches	88	25	13	1 863.06
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Magnetic non-contact switches (non coded) Up to: PLe ISO13849-1

IDEM's magnetic non-contact safety interlocks are designed to conform to **IEC 60947-5-3** and be used as directed by **ISO12100**, **ISO14121** and **ISO14119**. They feature magnet and reed technology, providing a high tolerance to misalignment and extreme temperatures.

MPR - Miniature industry standard (22 mm fixing centres)

114004	MPR	12 mm	2 NC	compact magnetic switches	36	26	13	1 635.36
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LPR - European industry standard fitting (78 mm fixing centres)

110012	LPR	12 mm	2 NC	rectangular magnetic switches	88	25	13	2 178.17
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Normally closed (NC) circuits are closed with the actuator is present.

Safety limit switches (die-cast metal body)

type	model	sensing distance	circuits	description	dimensions (mm)			price
					(H)	(W)	(D)	

172007	LSMM	12 mm	2NC/1NO	roller plunger limit switch	73	35	14	801.58
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EM - Panel door limit switch 6A 240 VAC IP20

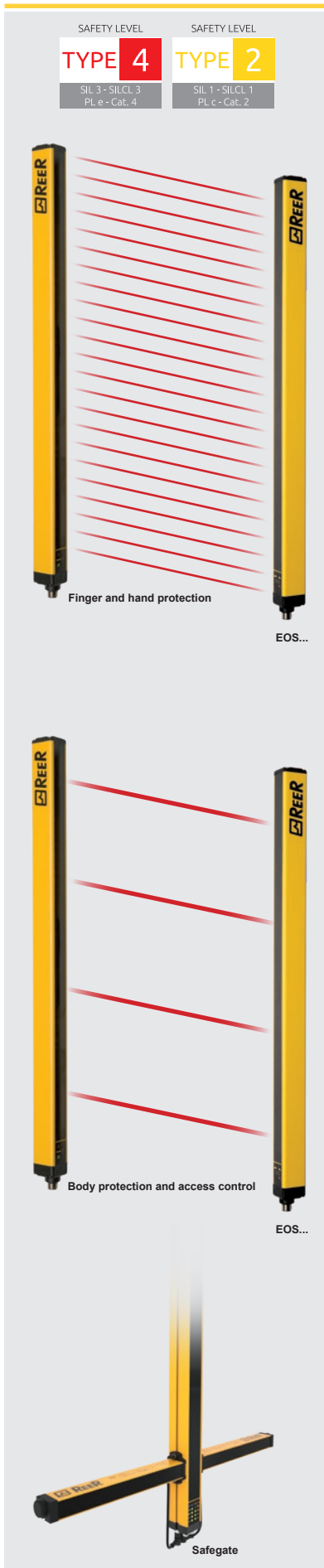
Used for the detection of panel doors and gates opening or closing as a safety measure to disconnect system if door is opened or to activate an internal panel light for illumination of the innards of the panel when the door is opened.

- Contact configuration: 1NO+1NC contact (NC contact with positive opening)
- Dimensions: (H) 59 x (W) 28 x (D) 24.4 mm (*including plunger*)
- Material: Fire retardant material used for mechanical & electrical safety

type	current Ith	actuator	description	price
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MLASS3A5	6A	rounded metal plunger	panel door limit switch	127.66
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HC122505	cover	terminal protection cover for above panel door limit switch		10.94
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EOS series - Safety light curtains

With its compact, robust housing EOS series is ideal for the protection of any machine tool, in particular where space restrictions exist. Its zero-dead-zone on one side, allows EOS to keep its original resolution when installed on a plane and up to 40 mm when installed at 90° against another EOS unit. The hardware configuration feature does not require any programming allowing easy installation and replacement.

- Power supply: 24 VDC ± 20%
- Dimensions: (W) 28 x (D) 30 mm
- Restart: Selectable manual/automatic Start/Restart
- Status display: LEDs for light curtain's status and diagnostic
- Integrated function: Integrated External Device Monitoring (EDM) function
- Mounting: Via back slot with provided standard mounting brackets
- Connection: Emitter: M12 5-pin - Receiver: M12 8-pin (see pages K-23 / 24)
- OSSD safety outputs: 2 PNP - 400 mA at 24 VDC with short-circuit, overload, polarity reversal protection



type	resolution	protected height	No. beams	description	overall height	connection type	price
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For finger and hand protection - Safety light curtains IP65/67

EOS2 X - Safety light curtain with built-in control functions - Type 2

- Detection: Hand protection (30 mm resolution) • Maximum range: Selectable 4/12 meter
- Safety Level: Type 2, SIL 1/SILCL 1, PL c, Cat. 2

1321200	30 mm	260 mm	13	safety light curtain	313 mm	M12 plug	8 655.18
1320211	30 mm	310 mm	16	safety light curtain	363 mm	M12 plug	9 193.39
1320212	30 mm	460 mm	23	safety light curtain	513 mm	M12 plug	10 809.19
1320213	30 mm	610 mm	31	safety light curtain	663 mm	M12 plug	12 431.89
1320214	30 mm	760 mm	38	safety light curtain	813 mm	M12 plug	14 294.95
1320215	30 mm	910 mm	46	safety light curtain	963 mm	M12 plug	16 158.01
1320216	30 mm	1060 mm	53	safety light curtain	1113 mm	M12 plug	17 733.56

EOS4 X - Safety light curtain with built-in control functions - Type 4

- Detection: Finger protection (14 mm resolution) • Maximum range: Selectable 3/6 meter
- Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4

1310010	14 mm	160 mm	15	safety light curtain	213 mm	M12 plug	13 179.42
1310011	14 mm	310 mm	30	safety light curtain	363 mm	M12 plug	17 112.54
1310012	14 mm	460 mm	45	safety light curtain	513 mm	M12 plug	20 953.66
1310013	14 mm	610 mm	60	safety light curtain	663 mm	M12 plug	24 783.28
1310014	14 mm	760 mm	75	safety light curtain	813 mm	M12 plug	28 762.41
1310015	14 mm	910 mm	90	safety light curtain	963 mm	M12 plug	32 592.03

- Detection: Hand protection (30 mm resolution) • Maximum range: Selectable 4/12 meter
- Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4

1310211	30 mm	310 mm	16	safety light curtain	363 mm	M12 plug	10 933.40
1310212	30 mm	460 mm	23	safety light curtain	513 mm	M12 plug	12 788.41
1310213	30 mm	610 mm	31	safety light curtain	663 mm	M12 plug	14 628.46
1310214	30 mm	760 mm	38	safety light curtain	813 mm	M12 plug	16 756.03
1310215	30 mm	910 mm	46	safety light curtain	963 mm	M12 plug	18 883.60
1310216	30 mm	1060 mm	53	safety light curtain	1113 mm	M12 plug	21 022.66
1310217	30 mm	1210 mm	61	safety light curtain	1263 mm	M12 plug	23 150.23

Note: Heights (up to 2.2 meters) and extended range up to 20 meters available on request.

For Body protection and access control - Safety light curtains IP65/67

- Detection: Body protection / Access control • Maximum range: Selectable 4/12 meter

EOS2 X - Safety light curtain with built-in control functions - Type 2

1320610	-	510	2	safety light curtain	653 mm	M12 plug	8 572.37
1320611	-	810	3	safety light curtain	953 mm	M12 plug	9 856.96
1320612	-	910	4	safety light curtain	1053 mm	M12 plug	10 974.80

EOS4 X - Safety light curtain with built-in control functions - Type 4

1310610	-	510	2	safety light curtain	653 mm	M12 plug	9 441.80
1310611	-	810	3	safety light curtain	953 mm	M12 plug	11 181.81
1310612	-	910	4	safety light curtain	1053 mm	M12 plug	12 466.40

Mounting accessories for safety light curtains (std L-shaped brackets included with light curtains)

1310980	SFB E180	brackets	set of (4) x 180° swivel brackets for	EOS2/4	930.38
1310997	FE 4	brackets	set of (4) flat brackets for	EOS2/4	639.43
1310973	SAV 8E	dampers	set of (8) vibration dampers for	EOS2/4	581.92

Safegate - Safety light curtain (type 4) with integrated muting functions

Safegate safety light curtains is the ideal solution for the protection of a vast number of high-risk industrial applications, in particular those requiring a high level of integration of the muting functions.

POR



Mosaic - A unique safety controller: Modular, Expandable, Configurable

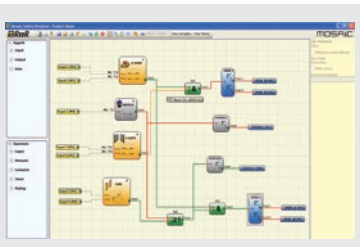
Mosaic is a modular configurable safety controller capable of managing all safety functions of machinery or plants. Made up of a Master unit which can operate as a stand-alone device or control up to 14 expansion units in a system.

Capable of monitoring several safety sensors and signals such as: light curtains - photocells - laser scanners - emergency stops - electromechanical switches - safety door switches - magnetic switches - safety mats and edges - two-hand controls - hand grip switches - encoders and proximities for safety speed control - load cells - pressure switches - temperature, flow and level measurements.

- Power supply: 24V DC ± 20%
- Safety level: SIL 3, PL e, SILCL 3, Cat. 4
- Connections: Removable (*screw terminal*) blocks
- Mounting: DIN rail mounting according to EN 50022-35 standard
- Dimensions: (H) 99 x (W) 22.5 x (D) 114 mm

Advantages

- Tamper-proof system configuration
- Reduced control panel dimension, design and construction time
- Logic configured via graphic interface, eliminating laborious wiring as with traditional solutions
- **Simulation function** allows to validate system functionality without connecting to a machine



FREE DESIGNER SOFTWARE included with M1/M1S units



1100000



1100005



1100043



1100050

type	model	digital inputs	Start / Restart inputs	OSSD safety outputs	status outputs	description	price
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Mosaic master units

Master units can operate as stand-alone device or expanded with additional I/O modules.

M1 - Standard master unit

- 2 pairs SIL 3 OSSD safety outputs (*PNP 400 mA*)
- 2 inputs for Start/Restart interlock and external device monitoring (*EDM*)
- 2 programmable digital status outputs (*PNP 100 mA*)
- 4 test outputs (*for sensor monitoring*)

1100000	M1	8	2	2 pairs	2	standard master controller	6 621.91
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M1S - Enhanced master unit

- 4 single SIL 3 OSSD or (*2 pairs*) safety outputs (*PNP 400 mA*)
- 4 inputs for Start/Restart interlock and external device monitoring (*EDM*)
- 4 programmable digital status outputs (*PNP 100 mA*)
- 4 test outputs (*for sensor monitoring*)

1100003	M1S	8	4	4 or (2 pairs)	4	enhanced master controller	8 277.96
1100005	MZERO	16	4	4 or (2 pairs)	4	standalone safety controller	11 440.56
1100006*	M1SCOM	8	4	4 or (2 pairs)	4	master controller builtin comms	13 317.42

* Build in Ethernet IP, Modbus TCP, EtherCAT, and Profinet

Accessories for M1/M1S/COM master units

1100060	MCM	memory card to store or duplicate master unit configuration as a backup	662.43
1100061	MSC	rear bus connector required to connect to any expansion module	276.01
1100062	USB	USB configuration cable (A-mini B, length 1.8 m)	325.47

Mosaic - Expansion modules

Input/output expansion modules provides additional digital inputs and outputs to the master unit

1100010	MI8O2	2x pairs SIL 3 OSSD safety outputs, 8x digital inputs, 2x status outputs	5 463.83
1100011*	MI8O4	4x single SIL 3 OSSD safety outputs, 8x digital inputs, 4x status outputs	6 290.70
1100021	MI16	16x digital inputs and 4x test outputs (<i>for sensor monitoring</i>)	5 243.02
1100025*	MA4	4x 4-20mA (or 0-10V) analogue inputs (<i>for analogue sensors</i>)	14 352.45

* Only compatible with M1S and M1SCOM enhanced Master unit.

1100031	MO4	4x pairs SIL 3 OSSD safety outputs, 4x status output	5 959.49
1100032	MO4LHC	4x single high current SIL 3 OSSD safety outputs (2A), 8x status output	6 621.91

Status outputs provides additional non-safety outputs to the master unit

1100092	MOS16	16x programmable digital (<i>non-safety</i>) signal outputs	4 635.80
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Safety relays provides safety relay outputs with guided contacts

1100041	MR4	4x safety relay outputs with guided contacts (6A 250 VAC)	3 766.37
1100043	MOR4S8	4x configurable safety relay outputs with guided contacts	6 621.91

Communication for connection to the most common industrial Field-bus systems

1100050	MBP	Profibus DP	module for diagnostics and data communication	7 661.54
1100051	MBD	DeviceNET	module for diagnostics and data communication	7 661.54
1100052	MBC	CANopen	module for diagnostics and data communication	7 661.54
1100054	MBEI	EtherNET IP	module for diagnostics and data communication	6 069.90
1100082	MBMR	Modbus RTU	module for diagnostics and data communication	7 661.54



1330913



1330904



1292000



1291001



1291011

Safety interfaces and relays

- Power supply: 24 VDC ± 20%
- Electrical connection: On terminal block
- Mounting: DIN rail mounting according to EN 50022-35 standard
- Dimensions: Relays - (H) 101 x (W) 35 x (D) 120 mm
Interfaces - (H) 99 x (W) 22.5 (35 mm - ADSRM) x (D) 114 mm

type	model	no. of inputs	safety inputs	safety outputs	status outputs	description	price
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Safety interfaces and relays

Safety interface for emergency stop buttons and safety switches							PL e - Cat. 4
1330913	ADSRE4	1	2 of 1	3NO+1NC	-	auto / manual start restart	3 136.15
1330914	ADSRE4C	1	2 or 1	3NO+1NC	-	manual start restart	3 136.15
Safety interface for safety light curtains							Type 4 - SIL 3 - SILCL 3 - PL e - Cat. 4
1330904	ADSRM	6	4	2NO	2	muting safety light curtain	5 059.01
1330902	ADSRO	-	2	2NO+1NC	1	relay module for EOSX	1 961.97
1330903	ADSR0A	-	2	2NO	1	relay module for EOSX	1 480.10
Safety speed monitoring interface (H) 108 x (W) 22.5 x (D) 114.5 mm							SIL 3 - SILCL 3 - PL e - Cat. 4
1100078	SVMRO	2	2	2NO	2	over/zerospeed detection	7 987.01
1100088	SVMROU	2	2	2NO	2	underspeed detection	7 987.01
Safety interface for two-hand control							PL e - Cat. 4 Type III C (EN574)
1330915	ADSRT	1	2	2NO+1NC	-	two hand control	3 550.17

RFID safety switches 24 VDC SIL 3 - SILCL 3 - PL e - Cat. 4

Magnus RFID non-contact safety sensors provide highly-reliable, tamper-proof personnel protection for monitoring protective doors, gates and guards. It uniquely identifies passive RFID transponders ensuring high coding levels and effective protection against manipulation with easy installation and safety system integration to PL e/SIL 3. Sensors can be individually coded in two different ways for appropriate tampering protection in all applications.

- Actuator coded:** The actuator is free and not specifically assigned to the sensor (*one actuator can work with multiple sensors*)
- Individual coding:** Programmed via teach-in and permanently assigned to sensor during set-up (*the process can be repeated up to 8 times if necessary*)
- Indication: LED status indicators for fast diagnostics
- Output: 2 safety inputs and outputs and 1 diagnostic output
- Connection type: M12 connector - (Pigtail M12/8-pin - 150 mm)
- Mounting: Screw mounting **S** - inter-axis 22 mm
- Tampering protection in accordance with DIN EN 14119, the highest in its class
- Can be installed individually or in series with up to 30 units (*accessories required*)
- High EMC immunity and IP67 protection ensure excellent reliability in harsh environments
- Resistant to aggressive media, e.g. cleaning agents used in the food and packaging industry

type	sensing distance (mm)	description	dimensions (mm)			price
			(H)	(W)	(D)	

RFID safety switches <i>supplied as sensor/actuator combination</i>							
1292000	CSCAM	8 ... 18	S actuator coding RFID safety switch	26	36	13	3 066.00
1292010	CSIAM	8 ... 18	S individual coding RFID safety switch	26	36	13	3 868.73

Accessories

1292401	SPS	spacers	for S series (<i>recommended for mounting on metal surfaces</i>)				162.16
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Magnetic safety switches 24 VDC

- Compact and robust thermoplastic enclosure (PBT)
- Coded magnetic operation – Tamper resistant
- Sensor with M8/4pin connector: 2 NO contacts
- Connected to Mosaic safety controller provides a certified PL e safety system

1291000	MGS20	3...10	MGS compact magnetic safety switches	36	13	26	726.83
1291001	MGSM	3...10	MGS magnet unit for above switches	36	13	26	242.66
1291010	MGB20	4...16	MGB rectangular mag. safety switches	88	25	14	678.53
1291011	MGBM	4...16	MGB magnet unit for above switches	88	25	14	194.36



Rope-operated pull lever limit switches (IP65)

- Heavy-duty metal body
- Supplied with cable gland (PG11)

type	description	operating force (N)	contacts	price
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PLNU series - Heavy-duty non-latching rope-operated limit switches

- Direct (*positive*) opening action - safety function according to IEC/EN 60947-5-1
- Thermal current: lth: 10A Ui: 400 VAC
- Dimensions: (H) 89 x (W) 84 x (D) 40.5 mm

PLNU1AT25W	rope operated limit switch (<i>non-latching</i>)	25N	1NO + 1NC	913.13
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P2LU series - Heavy-duty latching rope-operated limit switches

Latching (*hand reset*) limit switches EN 418 compliant

- Latching with push button "Reset" facility on switch
- Thermal current: lth: 6A Ui: 400 VAC

P2LU series (H) 175 x (W) 85 x (D) 47 mm

P2LU1SAT75AG	rope operated limit switch (<i>latching/hand reset</i>)	7.5 kg	1NO + 1NC	1 879.16
P2LU1SAT15AG	rope operated limit switch (<i>latching/hand reset</i>)	15 kg	1NO + 1NC	1 982.67

Heavy duty rope-operated limit switches with pre-tensioning facility

EN418 compliant

- 2 NC contacts (*when pre-tensioned*) 1 opens if rope breaks the other opens when rope is pulled
- Large field of overlap for easier regulation of pre-tensioning
- Latching with push button "Reset" facility on switch
- Thermal current: lth: 6A Ui: 400 VAC

with pre-tensioned rope

PLN series - 60N (H) 82 x (W) 104 x (D) 40.5 mm

PLN131311	rope operated limit switch (<i>latching/hand reset</i>)	60N - 6kg	1NO + 1NO	1 159.24
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P2L series - 120N (H) 161 x (W) 100 x (D) 48.5 mm

P2L131312	rope operated limit switch (<i>latching/hand reset</i>)	120N - 12kg	1NO + 1NO	2 120.67
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Accessories for rope-operated switches

P33032	adjustable rope terminal clamp Ø 5 mm			26.80
P33033	rope eye of Ø 5 mm (<i>cable end thimble</i>)			10.94
P33034	turn buckle M6 x 60 for rope tensioning			119.61
P33035	threaded eye bolt M8 guide for rope			41.41
P33036	steel rope 0.5 mm PVC sheathed (<i>red insulated</i>)	(100met)		5 264.87

Safety limit switches (*slow break*)

Quickly and easily detect the position of moving parts and safely install machinery.

KB Q1 L11	slotted lever actuator	safety limit switch	1 NO + 1 NC	493.37
KB N1 L11	key operated (<i>straight key</i>)	safety limit switch	1 NO + 1 NC	499.12
KB N2 L11	key operated (<i>angled key</i>)	safety limit switch	1 NO + 1 NC	499.12

Spare keys for safety limit switches

KX N1	straight key	for safety limit switches	–	74.76
KX N2	angled key	for safety limit switches	–	77.06
KX N3	straight "T" key	for safety limit switches	–	57.51
KX N4	angled "T" key	for safety limit switches	–	57.51

RS1 series - Rope operated limit switches (H) 104 x (W) 30.5 x (D) 35 mm

IP65

- Double-insulated housing glass fibre-reinforced self extinguishing
- Self-cleaning silver-alloy contacts, Snap action contacts
- Thermal current: lth:10A Ui: 250 VAC

Non-latching rope operated limit switches (*snap action*)

RS11310	rope operated limit switch (<i>non latching</i>)	25N	1NO + 1NC	734.88
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Latching (*hand reset*) limit switches EN 418 compliant

RS131310	rope operated limit switch (<i>latching/hand reset</i>)	25N	1NO + 1NC	811.93
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ES-VCH-S



ES-VCH-P



ES-PLS-KD



ES-DESH-43



ES-HDH-7H

Safety lockout hasps

Safety lockout hasps permit multiple padlocks to be used when isolating one energy source. The lockout hasp is placed through the isolating point and closed.

Each person carrying out maintenance or service attaches their unique individually keyed padlock through the lockout hasp, thereby ensuring complete safety during maintenance operations. The hasp can only be removed once all padlocks have been removed.

General features:

- Scissor action hasp with Ø25 mm or 38 mm jaw size
- Accepts padlocks with a shackle diameter up to 9 mm (*up to 6 padlocks can be attached*)
- Manufactured from high tensile steel, electroplated to prevent rust

type	jaw size	colour	number of padlocks accepted	description	price
Vinyl coated hasp					
• Padlock section vinyl coated (<i>red</i>) for improved grip and visibility					
ES-VCH-S	25 mm	red	6	safety lockout hasp	134.00
ES-VCH-P	38 mm	red	6	safety lockout hasp	157.00
Lockout padlocks					
Maximum security laminated padlocks made for tough lockout situations.					
• Increased durability against cutting, prying and twisting					
• Supplied with two keys per lock					
ES-PLS-KD	padlock long shackle - different keys				200.00
Electric slider hasp					
• Made from hard nylon /ABS - highly visible					
• Recommended for electrical panels MCCB's, motor protection circuit breakers					
ES-DESH-43	3 mm (<i>shackle</i>)	yellow	4	slider hasp	140.00
Heavy Duty hasp (316 Stainless steel)					
• Marine grade 316 stainless steel					
• Fits most switchgear					
• For use in corrosive environments and mines					
ES-HDH-7H	3 mm (<i>shackle</i>)	red	7	heavy duty hasp	350.00

Example: Electric slider / Heavy Duty hasp



SM1P006 + ES-DESH-43



HMW630JR + ES-HDH-7H



PSM1-40/230



PSM2-40/230 TT



PSM4-40/400 TT



PSM-40/230



SAFEGROUND



PSM2-40/230 SG

Modular plug-in surge protection devices (SANS/IEC 61643-11)

For the protection of low voltage equipment against transient voltages and current surges from atmospheric origins (*lightning*) as well as transients produced by switching characteristics such as in switching of distribution networks, transformers, motors, etc.

- Provides protection for even most sensitive equipment (IEC 60634-4-443 category-1)
- Clear lifetime indication (*on front face*) and optional remote (IR) end of life signalling contact
- Meets all current international standards (*IEC 61643 / IEC 62305, etc.*)
- Plug-in cartridges for quick and easy replacement of damaged cartridges
- Suitable for all types of applications: residential, commercial and industrial

type	(8/20 μ s) L-N (Imax)	max. volts L-N (Uc)	voltage protection (Up)	poles	config.	with signal contact	width in 18 mm	price
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Type 2 / Class II surge protection devices

Ability to discharge induced voltage surges (8/20 μ s). Suitable for second level protection in supply distribution panels in which Type 1 protectors are installed, or first level of protection for applications not exposed to direct strikes and with no external lightning protection system. IEC 61643-11.

- High discharge capacity tested with an 8/20 μ s waveform: 20kA or 40 kA per phase
- Provides protection for most sensitive equipment (*IEC 60634-4-443 category 1*)

Imax 20kA (8/20 μ s)

PSM1-20/230	20 kA	320 V	≤ 1.4 kV	1	1ph	–	1	511.77
PSM1-20N	20 kA	265 V	≤ 1.5 kV	1	N	–	1	578.47
PSM2-20/230 TT	20 kA	320 V	≤ 1.4 kV	2	1ph+N	–	2	918.88
PSM2-20/230 TTIR	20 kA	320 V	≤ 1.4 kV	2	1ph+N	signal	2	1 326.00
PSM4-20/400 TT	20 kA	320 V	≤ 1.4 kV	4	3ph+N	–	4	1 722.76
PSM4-20/400 TTIR	20 kA	320 V	≤ 1.4 kV	4	3ph+N	signal	4	2 531.23

Imax 40kA (8/20 μ s)

PSM1-40/230	40 kA	275 V	≤ 1.3 kV	1	1ph	–	1	596.87
PSM1-40N	40 kA	265 V	≤ 1.5 kV	1	N	–	1	777.43
PSM2-40/230 TT	40 kA	275 V	≤ 1.3 kV	2	1ph+N	–	2	1 319.10
PSM2-40/230 TTIR	40 kA	275 V	≤ 1.3 kV	2	1ph+N	signal	2	1 672.16
PSM4-40/400 TT	40 kA	275 V	≤ 1.3 kV	4	3ph+N	–	4	2 093.07
PSM4-40/400 TTIR	40 kA	275 V	≤ 1.3 kV	4	3ph+N	signal	4	3 075.20

Class 2 surge protection devices for higher voltage applications (500 - 690V)

- Rated varistor voltage Uc = 750 VAC / Imax 30kA (8/20 μ s) Un 690 VAC

PSM1-30/750	30 kA	750 V	≤ 3.0 kV	1	1ph	–	1	880.93
PSM1-30/750 IR	30 kA	750 V	≤ 3.0 kV	1	1ph	signal	1	998.24
PSM3-30/750 TNC	30 kA	750 V	≤ 3.0 kV	3	3ph	–	1	2 250.63
PSM3-30/750 TNCIR	30 kA	750 V	≤ 3.0 kV	3	3ph	signal	1	2 933.75

Spare replacement plug-in cartridges for Type 2 surge arrestors

PSM-20/230	20 kA	320 V	< 1.4 kV	–	PSM1/2/4-20 phase		425.52
PSM-40/230	40 kA	275 V	< 1.3 kV	–	PSM1/2/4-40 phase		435.87
PSM-30/750	30 kA	750 V	< 3.0 kV	–	PSM1/3-30 phase		652.08
PSM-20N	20 kA	255 V	< 1.5 kV	–	PSM1/2/4-20 neutral		479.57
PSM-40N	40 kA	255 V	< 1.5 kV	–	PSM1/2/4-40 neutral		645.18

PSM SAFEGROUND

DIN - rail device for monitoring the earthing system from within the actual surge protection device. SAFEGROUND technology is based on the loop impedance monitoring sending current pulses to check the status of the grounding system and provide information regarding the proper wiring of the device and the existence of an adequate path to ground for the SPD itself to protect effectively.

- Confirms the device is properly installed and how effective the surge protection is
- Indication of the status of the earth loop via multi-state LEDs
- High discharge capacity with an 8/20 μ s waveform. Imax: 40 kA

Indication:

- Green: Correct earth connection
- Yellow: Poor earth connection
- Red: No earth connection

PSM2-40/230 SG	40 kA	275 V	≤ 1.3 kV	2	1ph+N	–	2	3 340.86
PSM4-40/400 SG	40 kA	275 V	≤ 1.3 kV	4	3ph+N	–	4	4 303.44



PSC2-12.5/230 TT



PSC4-25/400 TTIR



PSM3-40/1000 PV



PSC 12.5/230

Modular plug-in surge protection devices (SANS/IEC 61643-11)

Type 1+2 / Class I+II lightning current and surge arrestor (*combined in a single device*)

Suitable for first level protection of incoming power supply panels in areas with greater exposure to lightning. For installations usually provided with external lightning protection systems. Able to discharge lightning currents (10/350 μ s) and induced voltage surges (8/20 μ s) IEC 61643-11

- Capable of protecting equipment from direct lightning strikes
- Discharges impulse currents with a 10/350 μ s waveform. Iimp: 12.5 kA or 25 kA per phase
- Clear lifetime indication (on front face) and optional remote (IR) end of life signalling contact
- Provides protection for most sensitive equipment (*IEC 60634-4-443 category 1*)

type	10/350 μ s L-N (Iimp)	(8/20 μ s) L-N (Imax)	max. volts L-N (Uc)	voltage protection (Up)	poles	config.	width in 18 mm	price
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Type 1+2 / Class I+II lightning current and surge arrestor (*combined in a single device*)

Iimp (10/350) 12.5kA per phase, I total 25kA (2 pole) and 50kA (4 pole)

PSC2-12.5/230 TT	12.5 kA	65 kA	275 V	≤ 1.3 kV	2	1ph+N	2	3 293.71
PSC2-12.5/230 TTIR	12.5 kA	65 kA	275 V	≤ 1.3 kV	2	1ph+N	2	3 622.62
PSC4-12.5/400 TT	12.5 kA	65 kA	275 V	≤ 1.3 kV	4	3ph+N	4	6 588.56
PSC4-12.5/400 TTIR	12.5 kA	65 kA	275 V	≤ 1.3 kV	4	3ph+N	4	8 516.02

Iimp (10/350) 25kA per phase, I total 50kA (2 pole) and 100kA (4 pole)

PSC2-25/230 TT	25 kA	100 kA	275 V	≤ 1.5 kV	2	1ph+N	4	5 675.43
PSC2-25/230 TTIR	25 kA	100 kA	275 V	≤ 1.5 kV	2	1ph+N	4	6 186.05
PSC4-25/400 TT	25 kA	100 kA	275 V	≤ 1.5 kV	4	3ph+N	8	10 518.23
PSC4-25/400 TTIR	25 kA	100 kA	275 V	≤ 1.5 kV	4	3ph+N	8	11 465.86

(IR) last two digits - with signalling contacts for remote indication/monitoring of devices

Surge protection devices for photovoltaic (PV) installations 1000/1500 VDC

PSM PV is the range of devices for discharging induced transient overvoltages (Type 2 / Class II) for Photovoltaic installations, in accordance with EN 50539-11, UL 1449 certified.

Due to their location, solar panels and in many cases, the inverters they are connected to are exposed to and particularly prone to direct or indirect lightning strikes.

As PV systems are directly connected to electrical networks of buildings, surge protection is essential.

Type 2 / Class II - photovoltaic surge protection devices

Suitable for protection where no external protection is installed. Protection should be installed on the DC and AC side of an installation.

- Clear lifetime indication (*on front face*) and optional remote (IR) end of life signalling contact
- Plug-in cartridges for quick and easy replacement of damaged ones
- Suitable for PV applications: large-scale, rooftop and self-consumption (*off-grid*) DC installations.
- No back-up fuse required due to dynamic thermal disconnect system - capacity of 10kA (Iscpv)

1000/1500 VDC photovoltaic surge protection device

PSM3-40/1000 PV	–	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3	1 875.71
PSM3-40/1000 PVIR	–	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3	2 462.23
PSM3-40/1500 PV	–	40 kA	1500 V	≤ 5.0 kV	3	L+/PE/L-	3	2 812.99
PSM3-40/1500 PVIR	–	40 kA	1500 V	≤ 5.0 kV	3	L+/PE/L-	3	3 692.77

Type 1+2 / Class I+II photovoltaic surge protection devices (*combined in a single device*)

PSC PV is a combined device for discharging lightning currents (*Type 1 / Class I*) and protecting against induced transient overvoltages (*Type 2 / Class II*) for Photovoltaic installations, in accordance with EN 50539-11. DIN rail plug-in format.

- Protection for combiner boxes in areas with greater exposure to the atmosphere
- Exclusive device for photovoltaic systems according to EN 50539-11
- No back-up fuse required due to dynamic thermal disconnect system - capacity of 10kA (Iscpv)

1000 VDC photovoltaic surge protection device

PSC3-5/1000 PV	5 kA	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3	5 784.69
PSC3-5/1000 PVIR	5 kA	40 kA	1060 V	≤ 4.0 kV	3	L+/PE/L-	3	6 478.16

(IR) last two digits - with signalling contacts for remote indication/monitoring of devices

Spare replacement plug-in cartridges for surge arrestors

type	10/350 μ s L-N (Iimp)	(8/20 μ s) L-N (Imax)	max. volts L-N (Uc)	voltage protection (Up)	poles	config.	width in 18 mm	price
PSC 12.5/230	12.5 kA	65 kA	275 V	< 1.3 kV	1+2	PSC2/4 - 12.5 ph		1 470.90
PSC 25/230	25 kA	100 kA	275 V	< 1.5 kV	1+2	PSC2/4 - 25 ph		2 527.78
PSC 50N2	50 kA	65 kA	255 V	< 1.5 kV	1+2	PSC2 - 25 neutral		2 305.83
PSC 100N	100 kA	100 kA	255 V	< 1.5 kV	1+2	PSC4 - 25 neutral		3 517.97
PSM-40/1000 PV	–	40 kA	1170 V	< 2.0 kV	2	PSC3 - 40 PV		481.87
PSC-5/1000 PV	5 kA	40 kA	1060 V	≤ 4.0 kV	1+2	PSC3-12.5 PV		1 637.66



954315



961180



952070



952315



900453

For the protection of low voltage equipment against transient voltage and current surges mainly from atmospheric origin (*lightning*) and transient produced by switching characteristics such as in switching of distribution networks, transformers, motors, etc.

type	DEHN type	(10/350 μ s) L-N (Iimp)	(8/20 μ s) L-N (In)	max. voltage volts L-N (Uc)	protection voltage (Up)	config	width in 18 mm	price
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DEHN Type 1+2 combined lightning current and surge protection (in a single unit)

- Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1
- Prewired spark-gap-based type 1 and 2 combined lightning current and surge arrester

941110	shield	12.5 kA	12.5 kA	255 V	$\leq 1.5kV$	1ph+N	2	4 447.19
954115*	ventil M2	25 kA	25 kA	264 V	$\leq 1.5kV$	1ph+N	4	14 708.97
941310	shield	12.5 kA	12.5 kA	255 V	$\leq 1.5kV$	3ph+N	4	8 085.91
954315*	ventil M2	25 kA	25 kA	264 V	$\leq 1.5kV$	3ph+N	4	25 093.79

DEHN Type 1+2 combined lightning current and surge protection with integrated back up fuse

961200	ven CI	25 kA	–	255 V	$\leq 1.5kV$	ph	2	6 782.92
961205*	ven CI	25 kA	25 kA	255 V	$\leq 1.5kV$	ph	2	7 340.68

Type 1 lightning current protection with integrated backup fuse

961146*	bloc maxi	35 kA	–	440 V	$\leq 2.5kV$	ph	3	10 438.88
961176*	bloc maxi	35 kA	–	760 V	$\leq 4kV$	ph	3	11 277.26

Type 1 lightning current protection without integrated backup fuse

961145*	bloc	35 kA	–	440 V	$\leq 2.5kV$	ph	3	7 349.89
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DEHN N-PE

961180	gap maxi	100 kA	–	255 V	$\leq 1.5kV$	N	2	6 134.30
961185*	gap maxi	100 kA	–	255 V	$\leq 1.5kV$	N	2	6 639.16
952030	gap	–	20 kA	255 V	$\leq 1.5kV$	N	1	1 266.19
952035*	gap	–	20 kA	255 V	$\leq 1.5kV$	N	1	2 249.48

* With signalling contacts for remote indication/monitoring of devices

DEHN Type 2 surge protection devices without integrated back up fuse

Minimum requirement as per SANS 10142-1:2008 annex L for use in all electrical distribution boards and sub boards. For installation in conformity with the lightning protection zone.

- Replaceable plug-in modules
- Visual fault indication
- Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1

DEHN guard Type 2 surge protection device without integrated back up fuse

952070	guard	–	20 kA	275 V	$\leq 1.5kV$	ph	1	882.08
952090*	guard	–	20 kA	275 V	$\leq 1.5kV$	ph	1	1 539.12
952110	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	1ph+N	2	2 096.52
952115*	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	1ph+N	2	2 484.08
952310	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	3ph+N	4	3 692.77
952315*	guard	12 kA	20 kA	275 V	$\leq 1.5kV$	3ph+N	4	4 239.04

* With signalling contacts for remote indication/monitoring of devices

DEHN S/M ACI 275 Type 2 arrester protection device ACI (Advanced Circuit Interruption)

With its new integrated switch/spark gap combination, ACI (*Advanced Circuit Interruption*) technology reduces complexity, improves system availability and saves time, space and material costs. Function reliably and systems are always available.

952341	guard ACI	–	20 kA	275 V	$<1.5 kV$	3ph+N	4	6 486.21
952121	guard ACI	–	20 kA	275 V	$<1.5 kV$	1ph+N	2	3 804.32
952100	guard ACI	–	20 kA	275 V	$<1.5 kV$	ph	1	1 706.66

DEHN Type 2 surge protection device (non plug-in modules)

900453	basic	–	5 kA	340 V	$\leq 1.2kV$	1ph+N	2	957.98
900454	basic	–	10 kA	340 V	$\leq 1.3kV$	1ph+N	2	1 028.14
900463	basic	–	10 kA	340 V	$\leq 1.3kV$	3ph+N	4	1 606.61

DEHN Type 2 with built in fault indicator

900430	cord	–	5 kA	275 V	$\leq 1.5kV$	1ph+N	–	1 193.74
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DEHNrail modular Type 3 surge protection devices

- Replaceable plug-in protection modules
- High discharge capacity due to heavy-duty oxide varistor / spark gap combination
- Energy coordination with other arrestors

953200	rail	–	3 kA	255 V	1.25 kV	ph	1	1 695.16
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type	max. PV voltage (Ucpv)	(8/20 μs) DC+/DC- (Imax)	(10/350 μs) DC+/DC- (Iimp)	voltage protection (Up)	poles	config.	width in 18 mm	price
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Photovoltaic Surge Protection Devices

Due to their location, solar panels and in many cases, the inverters they are connected to are exposed to and particularly prone to direct or indirect lightning strikes. As PV systems are directly connected to the electrical networks of buildings surge protection is essential.

DEHNGuard Type 1+2 PV (SPD) with SCI (non-plug-in modules)

• Combined lightning current and surge arrester for use in Photovoltaic systems

900070	≤ 1200 V	6.25 kA	40 kA	≤ 3.8 kV	2	DC+/DC-	4	2 021.77
900075*	≤ 1200 V	6.5 kA	20 kA	≤ 3.8 kV	2	DC+/DC-	4	2 325.38
900071	≤ 1500 V	6.25 kA	40 kA	≤ 4.5 kV	2	DC+/DC-	4	2 189.67
900076*	≤ 1500 V	6.5 kA	20 kA	≤ 4.5 kV	2	DC+/DC-	4	2 493.28

DEHNGuard Type 2 PV (SPD) with SCI (non-plug-in modules)

• Short circuit interruption (SCI) technology for maximum safety in PV systems

950530	1000 V	–	25 kA	≤ 4 kV	3	DC+/DC-	3	3 416.76
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DEHNGuard Type 2+3 PV (SPD) with SCI

• Plug-in cartridges for easy replacement

• Safe replacement of protection modules without arc formation due to integrated DC fuses

952515*	≤ 1000 V	–	25 kA	≤ 4 kV	3	DC+/DC-	3	2 913.05
952520	1500V	–	12.5 kA	< 6 kV	3	DC+/DC-	4.5	7 920.30

* With signalling contacts for remote indication/monitoring of devices

Surge protection devices for data networks

type	nominal voltage (Un)	voltage line-line (Up)	(8/20 μs) per line (In)	(10/350 μs) per line (Iimp)	poles	config.	width (mm)	price
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BLITZDUCTOR – Protection modules

BLITZDUCTOR surge arresters are pluggable multipole DIN rail mounting arresters. Universally used for protecting Data networks, control/measuring circuits, bus or telecom systems.

- Permits easy replacement of modules (*no signal interruption when protection module removed*)
- Universal surge arrester for two-pole, three-pole or four-pole interfaces

920300	DIN rail mount socket to receive various protection modules for data networks							776.01
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BLITZDUCTOR XT – Protection modules

Type 2 P1 surge protection device high degree of protection for one pair

• For installation in conformity with lightning protection zone concept from 0B -2 and higher

926244	24 V	≤ 55 V	10 kA	–	4	line-PG	12 mm	1 052.29
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Type 1 P1 surge protection device optimal protection of one pair and the cable shield

• For installation in conformity with lightning protection zone concept from 0A -2 and higher

927224	24 V	≤ 90 V	5 kA	1.5 kA	2	line-PG	6 mm	1 848.66
927244	24 V	≤ 55 V	5 kA	1.5 kA	2	line-PG	6 mm	1 848.66
920244	24 V	≤ 52 V	10 kA	2.5 kA	4	line-PG	12 mm	1 606.61

DEHNpatch for Ethernet applications

Universal arrester for Industrial Ethernet, Power over Ethernet (PoE+ acc. to IEEE 802.3at to 57V) and similar applications in structured cabling systems according to class E up to 250 MHz.

929121	48 V	≤ 180 V	0.5 kA	0.5 kA	4	line-PG	19 mm	1 845.81
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DEHNpatch outdoor type 2 UL, CSA IP65

Complete surge protection unit to protect surveillance camera's, PoE ++ 4PPoE and other GBit Ethernet applications from damage due to surges. The IP65 rated enclosure permits safe to use outdoor. Lightning current discharge capacity (10/350 μs)

• Easy mounting: even at great heights (*universal brackets for poles and wall mounting*)

929221	24 V	≤ 52 V	10 kA	2.5 kA	4	line-PG	12 mm	3 795.12
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DEHNcare series - Safety protective gloves

- Size (*international*): 8 - medium
- Standard: IEC 61482-1-2 /1-1, DIN EN 388 / 407
- Direct incident energy (after box test: class 2) (Eio): 427 kJ / m²
- Good touch sensitivity due to soft leather glove palm (*breathable materials maximise wearing comfort*)

785796	medium	Arc-fault tested protective gloves						2 971.70
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Photoelectric smoke detectors					
type	supply voltage	standby current	alarm	description	price
Q series smoke detectors EN54 compliant					
<ul style="list-style-type: none"> Dual, bicolour LEDs (green: standby / red: alarm) offer 360° sensing Standard detector (4 wire) with relay output 0.8A - 30 VDC / 0.4A - 250 VAC Made of high endurance, solid and colour-fast fire-proof plastic Termination base (with captive screws) for easy installation Passed strict EMC tests, illuminating false alarms caused by interference from nearby devices 					
Smoke detector (Ø)102 mm x (H) 48 mm					
Q01-4*	12 - 30 VDC	25 - 75µA	45 mA	photoelectric smoke detector	474.97
Combination smoke and heat detector (Ø)102 mm x (H) 54 mm					
Q05-4*	12 - 30 VDC	55 - 85µA	45 mA	combination smoke + heat detector	558.92
8011 series smoke detectors EN54 compliant					
<ul style="list-style-type: none"> Dual LEDs offer 360° sensing Standard detector 2 wire – available in 4 wire (relay output) on request Made of high endurance, solid and colour-fast fire-proof plastic Termination base (with captive screws) for easy installation 					
Smoke detector (Ø)102 mm x (H) 47 mm					
8011-3*	12 - 30 VDC	25 - 75µA	40 mA	photoelectric smoke detector	363.42
Accessories for above smoke detectors					
06MB	Flush mount frame		for sensors	Q01-4, Q05-4, 8011-3	83.96
QA31 series single station smoke detector EN54 compliant					
<ul style="list-style-type: none"> Advanced photoelectric technology for precise detection Equipped with 9 VDC battery and 220 VAC power plug Low-battery warning (flashing LED indicates battery replacement) Built-in manual test button, buzzer (90dB/met.) and flashing LED Standard detector (4 wire) with relay output 0.8A- 30 VDC / 0.4A - 250 VAC Independent stand-alone device – can be installed without any wiring 					
Single station smoke detector (Ø)105 mm x (H) 40 mm					
QA31-4	100 - 220 VAC and/or 9V battery supply			photoelectric smoke detector	503.72
Manual call point "in case of fire" break-glass devices					
<ul style="list-style-type: none"> Surface mount with plastic film on glass (H) 88 x (W) 88 x (D) 52 mm Test key inserts from bottom Suitable for majority of conventional fire alarm systems Operating contact 6A 250 VAC 					
AH-0217*	emergency "break glass" manual call point enclosure				230.01
Audible and visual indicating devices					
Audible sounder and beacon IP44					
Electronic sounder designed for use with fire alarm, security and industrial signalling systems.					
<ul style="list-style-type: none"> 32 - signal tones selectable by Dip switch High sound output with low current consumption Volume control as standard (0 - 20dB adjustable) Two sets of input and output terminals for easy installation 					
AH-03127-S*	24 VDC	14.5mA	surface mount (Ø92.5 mm) electronic sounder		670.48
AH-03127-BS*	24 VDC	14.5mA	electronic sounder and illuminated beacon		782.03
Fire alarm bell					
<ul style="list-style-type: none"> Bell with ABS plastic base for easy mounting and total insulation from electricity Motor energised, low power consumption, long operating life 					
NQ418*	24 VDC	28mA	4" (100 mm) bell 90dB @1met		234.61
NQ618*	24 VDC	28mA	6" (152 mm) bell 90dB @1met		363.42
* Work in conjunction with fire control system					

