REER

Your future's safe!

SENSORS

safety contactless sensors and devices

product catalogue

πS PI-Safe

Fail-safe inductive sensors. See page 4

R.SAFE

Contactless RFID Safety Switches. See Page 9

new

22 mm interaxis

Highly visible status LED

3 different coding levels

Models

R-Safe RFID Plus (with M12 8 poles)
R-Safe RFID Basic (with M12 5 poles)

RFID

IP67 and IP69K

M12 connector,
Pigtail with M12 connector,
1, 3, 5 or 10 metres cable

Anti-tampering
protection caps

Magnus MG

Magnetic safety switches. See page 14

Ilion

Type 2 safety photocells. See page 17

Ulisse

Type 2 safety photocells. See page 18

SAFECODER

Safety Sin/Cos incremental encoder. See page 19

SAFELOCK

Safety switch with guard locking.
See page 21

Fail-safe inductive sensors

A complete range of sensors for position detection

- Certification to EN 60947-5-3 for electromechanical control gear
- Ensuring operator and machine safety
- No special actuator for electronic fail-safe sensors required
- Connection to safety interface, safety controller or safety PLC (i.e. AD SR1, Mosaic)

APPLICATIONS

- Door or flaps detection at closed position
- Cylinder shaft detection
- Treads up detection
- Bolster detection at a truck crane
- Robot cell working limitation of the working area
- Door detection
- Wind turbine lock / endpostion of the blade

APPROVALS

- 2006/42/EC “Machine Directive”
- 2014/30/EC “Electromagnetic Compatibility Directive”
- 2014/35/EC “Low Voltage Directive”
- EN 60947-5-3 "Low-voltage switchgear and controlgear - Part 5-3: Control circuit devices and switching elements - Requirements for proximity devices with defined behaviour under fault conditions (PDDB)"
- IEC 61508 “Functional safety of electrical / electronic / programmable electronic safety related systems"
- ISO 13849 “Safety of machinery - Safety-related parts of control systems”

OVERVIEW

The operating principle and thus the advantages of inductive sensors can be used for safety applications.

Inductive safety applications are special applications which require a non-contact and safe detection of a metal object.

A wear-free function due to the non-contact principle together with a high protection rating, guarantee a high uptime of machines and installations.

The PI-Safe sensor increases the uptime and safety of installations and can be connected to approved evaluation units without cross-fault monitoring.

Faults such as coil break or coil short circuit are diagnosed and the sensor passes into the defined safe state. Even a cross fault between the supply voltage and one of the two outputs does not affect the safety function of the sensor.

Applications include reliable positioning on rotary indexing tables and machine tools, safe triggering of slow travel or switching off in end positions for presses, gantry robots and actuators or safe area monitoring for robots.

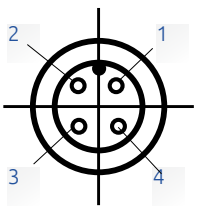
MAIN FEATURES

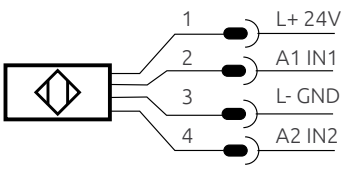
Operating voltage (VDC)	19,2 ... 30
Switching current (mA)	Max. 100
Safety output	2 OSSD
Electrical design	DC PNP
Connection	M12 4-pole connector
Signalling	LED yellow (signal), LED green (power)
Protection class	III

Operating temperature: -25 ... +70 °C

IP65 and IP67 protection rating
IP69K (PI M30 NF K model only)

CONNECTOR





SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M12 NF:**1293000**

PI M12 NF

METAL THREAD M12 X 1 / L = 70 MM

TECHNICAL FEATURES

Mounting	Non-flush mountable
Housing material	Body: stainless steel; Head: PBT
Enable zone (mm)	0,5 ... 4
Operating voltage (VDC)	19,2 ... 30
Current consumption (mA)	< 20
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 1

ACCESSORIES

- M12 angle bracket or M12 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M18 NF:**1293001**

PI M18 NF

METAL THREAD M18 X 1 / L = 70,5 MM

TECHNICAL FEATURES

Mounting	Non-flush mountable
Housing material	Body: stainless steel; Head: PBT
Enable zone (mm)	1 ... 8
Operating voltage (VDC)	19,2 ... 30
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 1

ACCESSORIES

- M18 angle bracket or M18 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M18 F:**1293002**

PI M18 F

METAL THREAD M18 X 1 / L = 70 MM

TECHNICAL FEATURES

Mounting	Flush mountable
Housing material	Body: Brass white bronze coated; Head: PBT
Enable zone (mm)	1 ... 5
Operating voltage (VDC)	19,2 ... 30
Current rating (mA)	100
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 1

ACCESSORIES

- M18 angle bracket or M18 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M18 FR:**1293003**

PI M18 FR

METAL THREAD M18 X 1 / L = 86,5 MM

TECHNICAL FEATURES

Mounting	Flush mountable
Housing material	Body: Brass white bronze coated; Head: PBT
Enable zone (mm)	> 10
Operating voltage (VDC)	10 ... 30
Current rating (mA)	50
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 5

ACCESSORIES

- M18 angle bracket or M18 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M30 NF:**1293004**

PI M30 NF

METAL THREAD M30 X 1,5 / L = 70 MM

TECHNICAL FEATURES

Mounting	Non-flush mountable
Housing material	Body: stainless steel; Head: PBT
Enable zone (mm)	1 ... 15
Operating voltage (VDC)	19,2 ... 30
Current rating (mA)	100
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 10

ACCESSORIES

- M30 angle bracket or M30 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL
SIL 2
PL d

PART NUMBER

PI M30 F:**1293005**

PI M30 F

METAL THREAD M30 X 1,5 / L = 70 MM

TECHNICAL FEATURES

Mounting	Flush mountable
Housing material	Body: Brass white bronze coated; Head: PBT
Enable zone (mm)	1 ... 10
Operating voltage (VDC)	19,2 ... 30
Current rating (mA)	100
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 10

ACCESSORIES

- M30 angle bracket or M30 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL

SIL 3

PL e

High protection class IP69K for use in harsh environments.

PART NUMBER

PI M30 NF K:**1293006**

PI M30 NF K

METAL THREAD M30 X 1,5 / L = 80 MM

TECHNICAL FEATURES

Mounting	Non-flush mountable
Response time (ms)	≤ 10
Enable zone (mm)	6 ... 12
Operating voltage (VDC)	19,2 ... 30
Current rating (mA)	100
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Housing material	Body: stainless steel; Head: PBT

ACCESSORIES

- M30 angle bracket or M30 mounting clamp. See page 8
- M12 5-pole straight connectors. See page 30

SAFETY LEVEL

SIL 3

PL e

PART NUMBER

PI SQ F NF:**1293007**

PI SQ F-NF

RECTANGULAR 40X40X66 MM

TECHNICAL FEATURES

Mounting	Non-flush or flush mountable
Housing material	Body: diecast zinc; Head: PPE;
Enable zone (mm)	10 ... 15
Operating voltage (VDC)	19,2 ... 30
Current consumption (mA)	< 15
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 50

ACCESSORIES

- M12 5-pole straight connectors. See page 30

SAFETY LEVEL

SIL 3

PL e

PART NUMBER

PI SQ NF:**1293008**

PI SQ NF

RECTANGULAR 40X40X66 MM

TECHNICAL FEATURES

Mounting	Non-flush mountable
Housing material	Body: diecast zinc; Head: PPE;
Enable zone (mm)	4 ... 20
Operating voltage (VDC)	19,2 ... 30
Current consumption (mA)	< 30
Max. capacitive load (nF)	20
Short-circuit protection	yes
Response time (ms)	≤ 50

ACCESSORIES

- M12 5-pole straight connectors. See page 30

ACCESSORIES

ANGLE BRACKET

- For mounting cylindrical sensors
- Easy, quick and inexpensive fixing
- Robust stainless steel design for use in harsh industrial environments
- Reliable mounting on a surface by means of two screws

	Ordering code	Model
	1293100	M12 bracket
	1293101	M18 bracket
	1293102	M30 bracket

CLAMPS WITH END STOP

- End stop for defined installation position
- Safe fixing of the sensor with click-fit mounting
- Easy, quick and inexpensive fixing
- Reliable mounting on a surface by means of two screws

	Ordering code	Model
	1293103	M12 mounting clamp
	1293104	M18 mounting clamp
	1293105	M30 mounting clamp

CABLES NEEDED

- M12 straight connector 5-pole for all models. See page 30

The best for series connections

- R-Safe RFID allows individual status reading without the need to individually wire the status output of each sensor.

The best in cost-effectiveness

- Wear-free technology allows for longer product life time.
- Status LED and diagnostic output.
- Full mechanical compatibility with Magnus RFID and Magnus MG “S” series.
- Can be used as stand-alone or in series.

The best in safety

- Tampering protection in accordance with EN ISO 14119, the highest in its class.
- Screw covers prevent easy removal.
- Series connection up to PL e/SIL 3.
- IP67 and IP69K protection grade for use in harsh environments.

The best in versatility

- Triple mounting options. M12 connector, M12 connector with pigtail or cable.
- 3 different coding levels.
- Extension cables for series connection.

Operating temperature: -25 ... +70 °C

High protection classes IP67 and IP69K for use in harsh environments

OVERVIEW

The application of R-Safe RFID sensors can be extremely wide thanks to the compact and versatile design.

The different design and technology options as well as the complete mechanical compatibility with the Magnus MG and RFID sensors “S” series, make this product extremely valuable for users.

The RFID technology enables R-Safe RFID sensors to be coded in three different ways to allow the appropriate tampering protection in all applications.

The highest level of coding allow the sensors to be paired only with the assigned actuators.

The RFID technology used allows to reach safety levels up to PL e/SIL 3 also when connecting the sensors in series.

As a result, R-Safe RFID sensors can be simply integrated in existing safety scenarios, offering a cost-effective solution for modifying and upgrading machines.

Multiple options of actuation technology

- **Generic coding**
  The actuator is free and not specifically assigned to the sensor (one actuator can work with multiple generic sensors)
- **Unique coding**
  The actuator is permanently assigned to the sensor during manufacturing (it cannot be replaced with another actuator)
- **Teach-in coding (Plus model only)**
  The actuator is programmed via teach-in and permanently assigned to the sensor during set-up (the process can be repeated if necessary)

Ideal also in the most demanding applications

Unique mechanical characteristics allow protection against cleaning agents and washdown processes, a typical requirement of the food industry.

Electrical specifications	
Supply voltage (VDC)	24 ± 20%
Power consumption (W)	0,5
Switching current safety output (mA)	Max. 300
Switching current status output (mA)	Max. 100
Safety outputs	2 OSSD active high
Safety inputs	2 inputs active high
Status output	1 output active high
Restart	Monitored normally open Restart input in series with EDM

Mechanical data	
Material	Polyketone (POK)
Housing	Rectangular
Connector type	M12 8 or 5 poles
Cable	PVC 8 or 5 wires
Cross-section of wire (mm²)	0,25
Temp. range cable (°C)	-25 … 80
Dimensions h x w x d (mm)	28,5 x 57 x 18
Mounting type	M4 screws

Operating characteristics			
Functioning operating distance(mm)	12	Shock resistance	30g / 11ms IEC 60068
Assured release distance Sar (mm)	25	Vibration resistance	10 ... 55 Hz, amplitude 1 mm
Operating temperature (°C)	-25 … +70	Switch-on delay (s)	10s typical, 15s max.
Storage temperature (°C)	-25 … +70	Response time (ms)	≤ 55
Umidity	0% @ 70 °C ... 90% @ 20 °C	Operating direction	Any direction
Protection class	IP65/IP67 (IP69K cable version)	Switching principle	Electronic
Series connection	Max. 16 sensors	Technology	RFID

APPROVALS

- 2006/42/CE “Machinery Directive”
- 2014/30/EU “Electromagnetic Compatibility Directive"
- 2011/65/EU " Restriction of the use of certain hazardous substances"
- 2014/53/EU "Radio Equipment Directive"
- EN ISO 13849-1:2015 "Safety of machinery - Safety-related parts of control systems -Part 1: General principles for design"
- EN ISO 14119: 2013 "Safety of machinery - Interlocking devices associated with guards - Principles for design and selection"
- CEI EN 60204-1 " Safety of machinery - Electrical equipment of machines"
- IEC 60497-5-1: 2019 "Low-Voltage Switchgear and Controlgear - Part 5: Control Circuit Devices and Switching Elements - Section 1: Electromechanical Control Circuit Devices"
- IEC 60497-5-2: 2019 "Low-Voltage Switchgear and c - Part 5: Control Circuit Devices and Switching Elements - Section 2:
- Proximity switches"
- IEC 60497-5-3: 2014 "Low-Voltage Switchgear and Controlgear - Part 5: Control Circuit Devices and Switching Elements - Section 3: Requirements for proximity devices with defined behavior under fault conditions (PDDB)
- EN 60068-2-27: 2009 "Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock"
- EIEC 61508-1:2010 " Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1:
- General requirements"
- IEC 61508-2:2010 "Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2:
- Requirements for electrical/electronic/programmable electronic safety-related systems"
- IEC 61508-3:2010 "Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3:
- Software requirements"
- IEC 61508-4:2010 "Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 4:
- Definitions and abbreviations"
- IEC 62061:2021 " Safety of machinery - Functional safety of safety-related control systems"

Watch the video!

SAFETY LEVEL

Cat. 4

SIL 3 - SILCL 3
PL e

PART NUMBERS

Combo[1] (Sensor + Actuator)

Model	Part number	Connection	Coding	Operative modes
RRFID PLUS C S G 1	1295047	Cavo 1 m	Generic	Manual restart Automatic restart Automatic re-start (without EDM) Serial connection
RRFID PLUS C S G 3	1295057	Cavo 3 m		
RRFID PLUS C S G 5	1295000	Cavo 5 m		
RRFID PLUS C S G X	1294020	Cavo 10 m		
RRFID PLUS C S T 1	1295048	Cavo 1 m	Teach-In	
RRFID PLUS C S T 3	1295058	Cavo 3 m		
RRFID PLUS C S T 5	1295001	Cavo 5 m		
RRFID PLUS C S T X	1294023	Cavo 10 m		
RRFID PLUS C S U 1	1295049	Cavo 1 m	Unique	
RRFID PLUS C S U 3	1295059	Cavo 3 m		
RRFID PLUS C S U 5	1295002	Cavo 5 m		
RRFID PLUS C S U X	1294026	Cavo 10 m		
RRFID PLUS C S G P	1295003	M12 pigtail	Generic	
RRFID PLUS C S T P	1295004	M12 pigtail	Teach-In	
RRFID PLUS C S U P	1295005	M12 pigtail	Unique	
RRFID PLUS C S G C	1295006	Connettore M12	Generic	
RRFID PLUS C S T C	1295007	Connettore M12	Teach-In	
RRFID PLUS C S U C	1295008	Connettore M12	Unique	
RRFID BASIC C S G 1	1295050	Cavo 1 m	Generic	Automatic restart
RRFID BASIC C S G 3	1295060	Cavo 3 m		
RRFID BASIC C S G 5	1295010	Cavo 5 m		
RRFID BASIC C S G X	1294029	Cavo 10 m		
RRFID BASIC C S U 1	1295252	Cavo 1 m	Unique	
RRFID BASIC C S U 3	1295262	Cavo 3 m		
RRFID BASIC C S U 5	1295012	Cavo 5 m		
RRFID BASIC C S U X	1294032	Cavo 10 m		
RRFID BASIC C S G P	1295013	M12 pigtail	Generic	
RRFID BASIC C S U P	1295015	M12 pigtail	Unique	
RRFID BASIC C S G C	1295016	Connettore M12	Generic	
RRFID BASIC C S U C	1295018	Connettore M12	Unique	

Nota 1
Ogni set Combo consiste in un Sensore ed il corrispettivo Attuatore. Sensori ed Attuatori possono essere forniti anche singolarmente

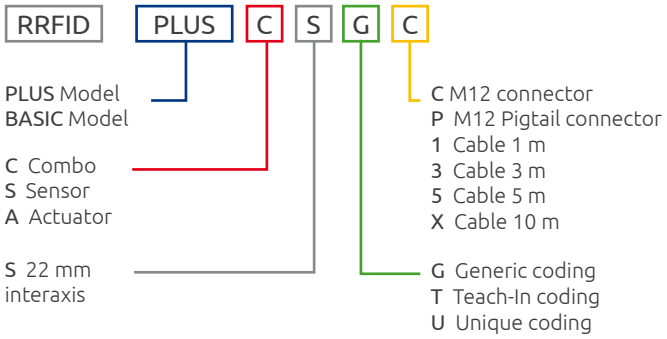
Sensor

Model	Part number	Connection	Coding	Operative modes
RRFID PLUS S S G 1	1295043	Cavo 1 m	Generic	Manual restart Automatic restart Automatic re-start (without EDM) Serial connection
RRFID PLUS S S G 3	1295053	Cavo 3 m		
RRFID PLUS S S G 5	1294000	Cavo 5 m		
RRFID PLUS S S G X	1294010	Cavo 10 m		
RRFID PLUS S S T 1	1295044	Cavo 1 m	Teach-In	
RRFID PLUS S S T 3	1295054	Cavo 3 m		
RRFID PLUS S S T 5	1294001	Cavo 5 m		
RRFID PLUS S S T X	1294013	Cavo 10 m		
RRFID PLUS S S G P	1294003	M12 pigtail	Generic	
RRFID PLUS S S T P	1294004	M12 pigtail	Teach-In	
RRFID PLUS S S G C	1294006	Connettore M12	Generic	
RRFID PLUS S S T C	1294007	Connettore M12	Teach-In	
RRFID BASIC S S G 1	1295045	Cavo 1 m	Generic	Automatic restart
RRFID BASIC S S G 3	1295055	Cavo 3 m		
RRFID BASIC S S G 5	1294009	Cavo 5 m		
RRFID BASIC S S G X	1294016	Cavo 10 m		
RRFID BASIC S S G P	1294012	M12 pigtail		
RRFID BASIC S S G C	1294015	Connettore M12		

Actuator

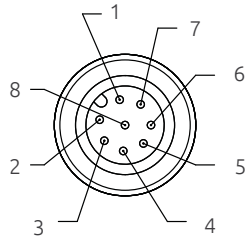
Model	Part number	Coding
RRFID A S G	1294050	Generic
RRFID A S T	1294051	Teach-In

CODE LEGEND (ORDERING INFORMATION)



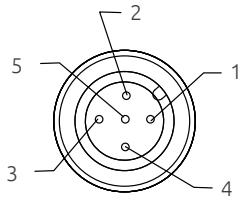
PIN-OUT

Pin-out Plus Model



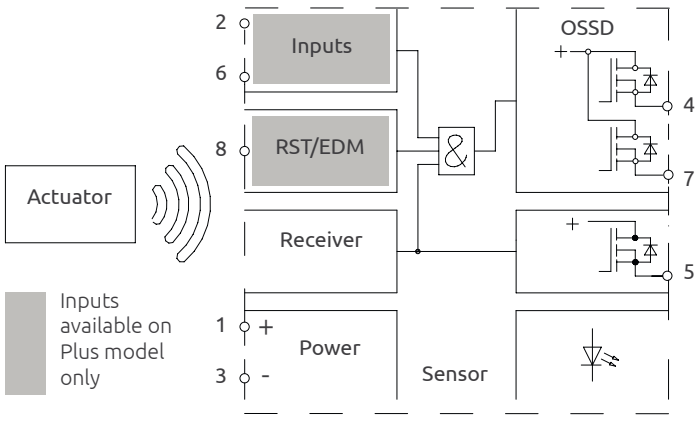
Pin	Function
1	24 VDC
2	Safety input 1
3	GND
4	OSSD 1
5	Diagnostic output
6	Safety input 2
7	OSSD 2
8	RST/EDM input

Pin-out Basic Model

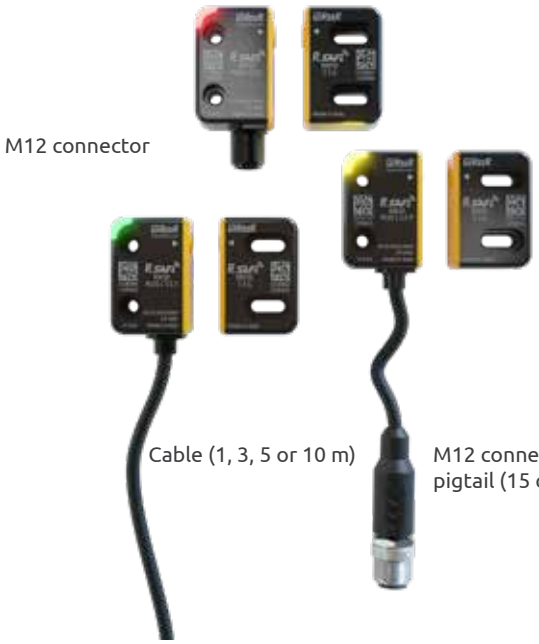


Pin	Function
1	24 VDC
2	OSSD 1
3	GND
4	OSSD 2
5	Diagnostic output

CIRCUIT DIAGRAM



CONNECTIVITY



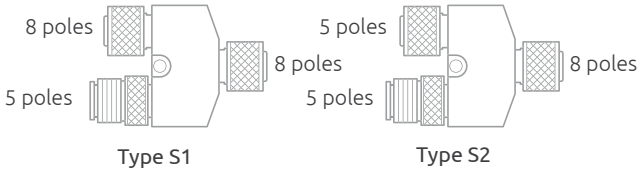
ACCESSORIES

Cables

- Models with M12 connector and M12 Pigtail - Cables CDx and CF8Px. See page 30 and page 33.
- Extension cables for series connection - Cable CFM5Px and CFM8Px. See page 34.

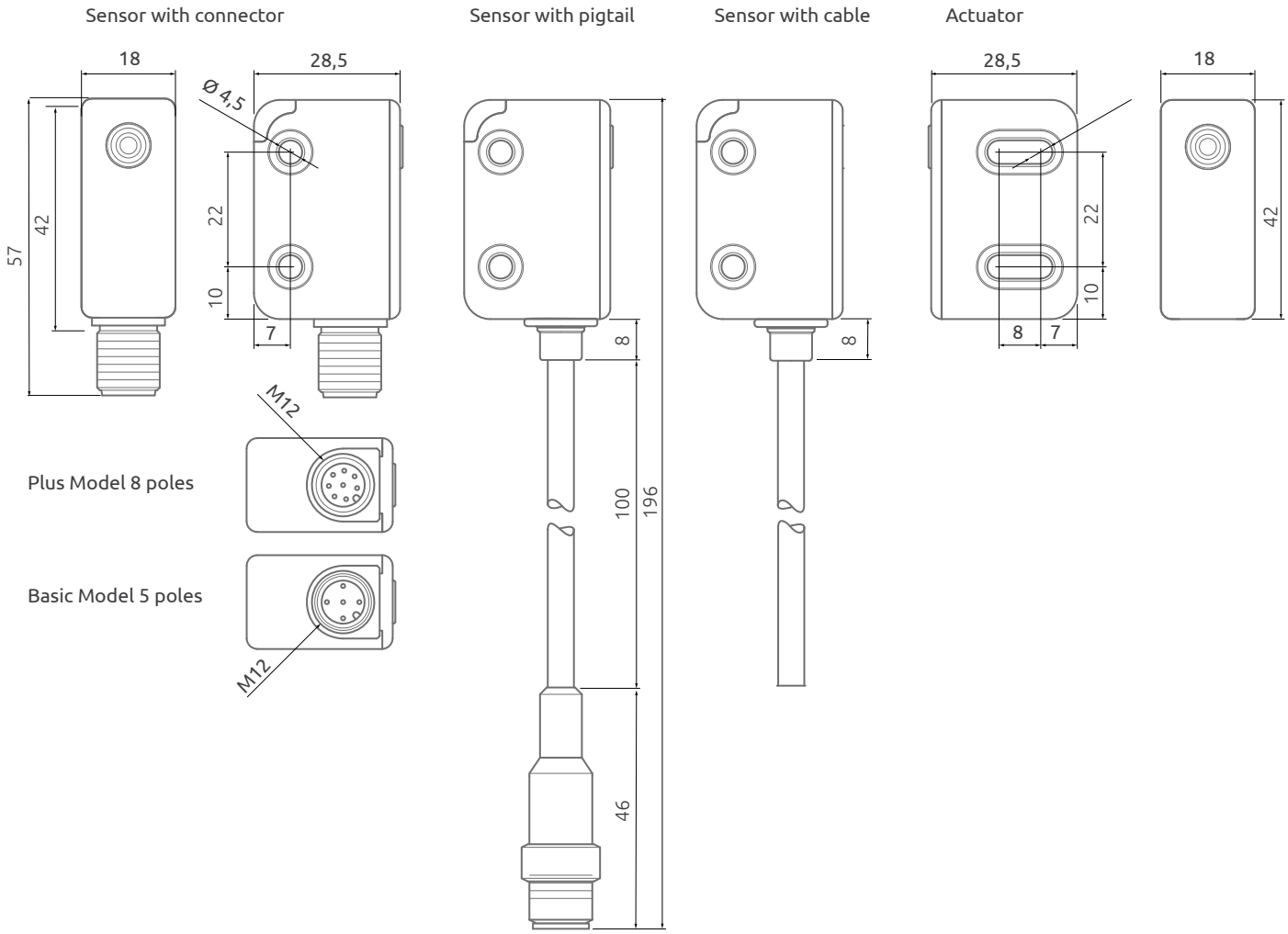
Splitter connectors (for series connection)

- CRY12-885 TYPE S1 connector, for the 1st sensor of the serie
- CRY12-855 [1295107]
  TYPE S2 connector, for subsequent sensors of the serie



R-Safe RFID satisfies all connection requirements. Cables and connectors approved for the food industry complete the range of sensors

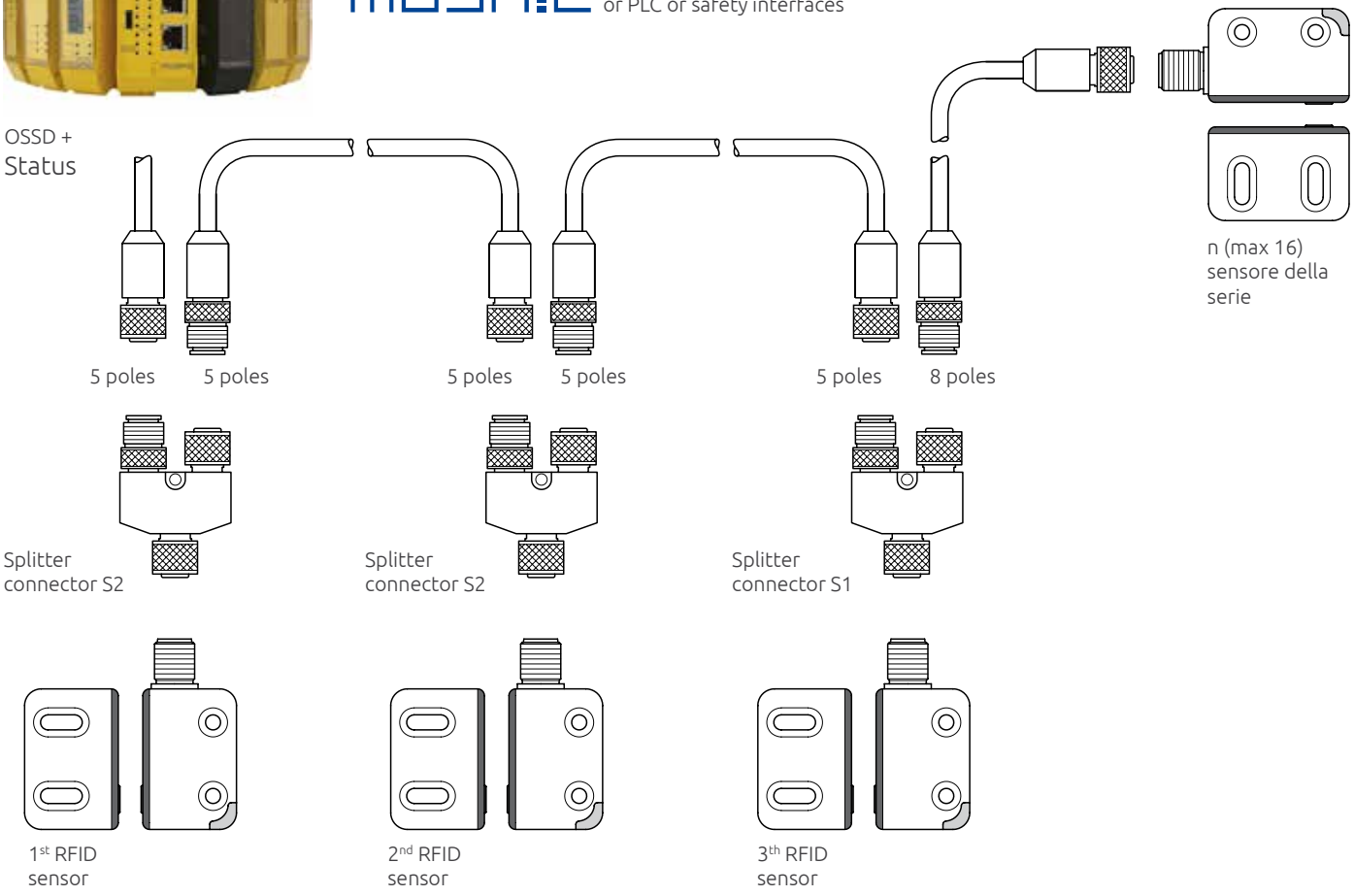
MECHANICAL DATA



SERIES CONNECTION

Up to PL e Performance Level
according to EN ISO 13849-1

MOSAIC or PLC or safety interfaces



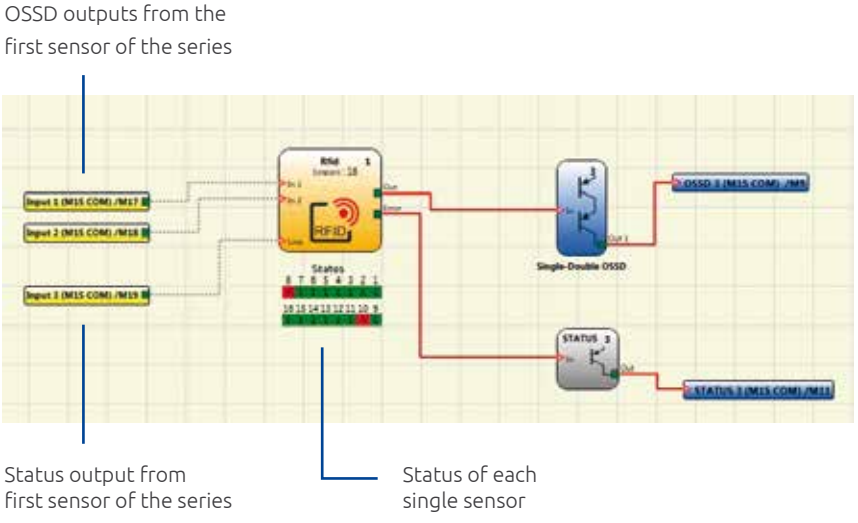
Example of connection with Mosaic

Allows individual status reading without individual status output wiring

The signal status contains the individual status of each sensor in the series.

A simple logic signal readable by any PLC or directly with Mosaic M1S or Mosaic M1S COM.

The status of each single sensor is also available on fieldbus data information.



MG S M

MG S 20

- Compact and robust thermoplastic enclosure (PBT)
- 22 mm fixing
- Coded magnetic operation – Tamper resistant
- Switching distance: 3 - 10 mm
- Sensor with 4 wires: 2 NO contacts.

MG B M
MG B M+

MG B 20

- Robust thermoplastic enclosure (PBT)
- 78 mm fixing
- Coded magnetic operation – Tamper resistant
- Switching distance:
  - 4 - 16 mm
  - 7 - 18 mm with magnet MG B M+
- Sensor with 4 wires: 2 NO contacts

MG M 20

MG M M
MG M M+

- Robust cylindrical thermoplastic enclosure
- 30 mm diameter
- Coded magnetic operation – Tamper resistant
- Switching distance:
  - 4 - 16 mm
  - 7 - 20 mm with magnet MG M M+
- Sensor with 4 wires: 2 NO contacts

MG S
RECTANGULAR COMPACT HOUSING

TECHNICAL FEATURES

Operating voltage (VDC)	24
Switching current (mA)	Max. 100
Series resistance (Ohm)	22
Switching power (W)	3
Shock resistance (Hz/g)	10 - 2000/35
Possible actuation magnets	MG S M to be ordered separately

PART NUMBERS

MG S 20: **1291000** MG S M: **1291001**

MG B
RECTANGULAR HOUSING

TECHNICAL FEATURES

Operating voltage (VDC)	24
Switching current (mA)	Max. 100
Series resistance (Ohm)	22
Switching power (W)	3
Shock resistance (Hz/g)	10 - 2000/35
Possible actuation magnets	MG B M to be ordered separately
Possible actuation reinforced magnets	MG B M+ to be ordered separately (only use reinforced actuation magnets if a gap of more than 4 mm is unavoidable)

PART NUMBERS

MG B 20: **1291010** MG B M: **1291011**
MG B M+: **1291012**

MG M 20
CYLINDRICAL HOUSING

TECHNICAL FEATURES

Operating voltage (VDC)	24
Switching current (mA)	max. 100
Series resistance (Ohm)	22
Switching power (W)	3
Shock resistance (Hz/g)	10 - 2000/35
Possible actuation magnets	MG M M to be ordered separately
Possible actuation reinforced magnets	MG M M+ to be ordered separately (only use reinforced actuation magnets if a gap of more than 4 mm is unavoidable)

PART NUMBERS

MG M 20: **1291020** MG M M: **1291021**
MG M M+: **1291022**

APPROVALS

- 2006/42/EC: “Machine Directive”
- 2014/30/EU: “Electromagnetic Compatibility Directive”
- 2014/35/EU: “Low Voltage Directive”
- EN 61508-1:1998 “Functional safety of electrical/electronic programmable electronic safety related systems - General requirements”
- EN 61508-2:2000 “Functional safety of electrical/electronic/programmable electronic safety related systems - Requirements for electrical/electronic/programmable electronic safety-related systems”
- EN 61508-3:1998 “Functional safety of electrical/electronic programmable electronic safety related systems: Software requirements”
- ISO 13849-1:2008 “Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design”
- IEC 62061: “Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems”

Operating temperature: -25 ... +75 °C

IP67 protection rating

CONNECTIONS

Magnus MG magnetic sensors must be connected to Mosaic safety configurable controller (see Mosaic catalogue). Connected to Mosaic safety controller form a certified PL e safety system.

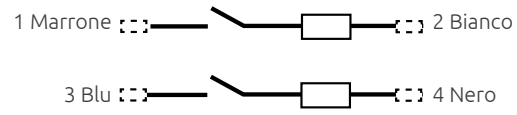
Can be also connectet to safety interfaces for emergency stop and safety switches

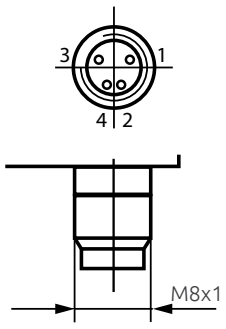
- Connected to AD SRE3 - AD SR3C form a certified PL d safety system
- Connected to AD SRE4 - AD SR4C form a certified PL e safety system

CABLE NEEDED

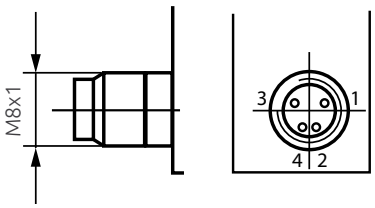
M8 4-pole. See page 32 (C8Gx, C8G9x)

CONNECTOR

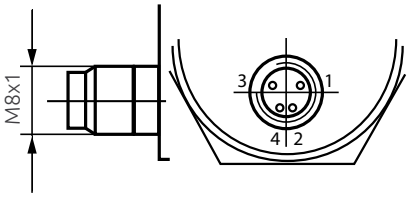




MG S

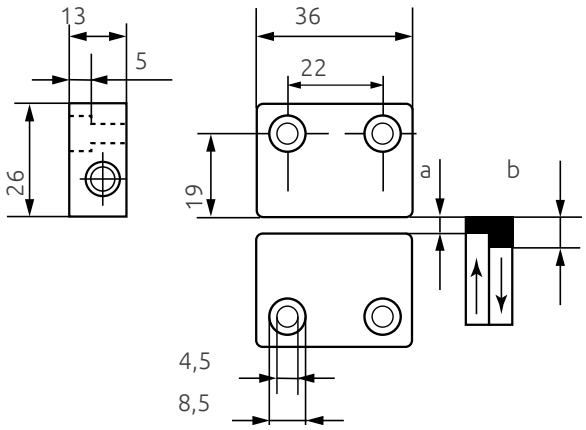


MG B

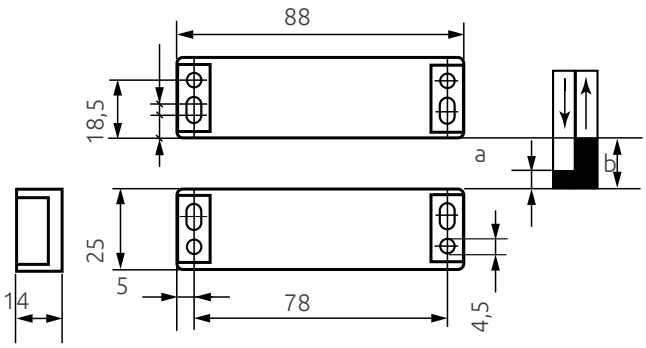


MG M

MECHANICAL DATA

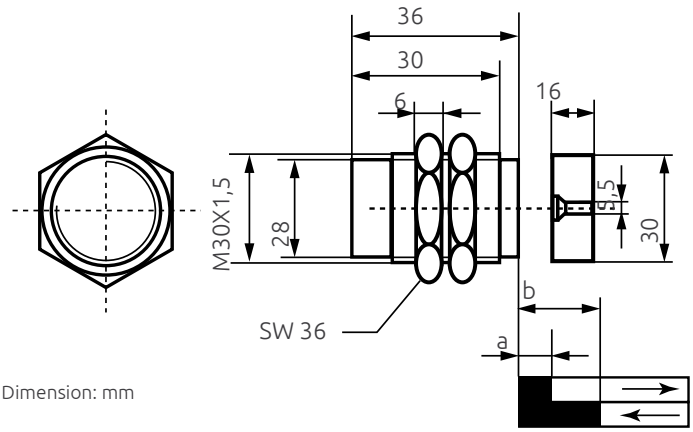


Gaps (operating distance) for safe switching function in mm:		
MINIMUN GAP	0,5	-
ON	3	a
OFF	10	b



Gaps (operating distance) for safe switching function in mm:			
MINIMUM GAP	normal with + magnet	0,5 3	
ON	normal with + magnet	4 7	a
OFF	normal with + magnet	16 18	b

+ = reinforced



Dimension: mm

Gaps (operating distance) for safe switching function in mm:			
MINIMUM GAP	normal with + magnet	0,5 3	
ON	normal with + magnet	4 7	a
OFF	normal with + magnet	16 18	b

+ = reinforced

Ilion is a Type 2 safety photocell with M18 cylindrical metal body.

The photocells must be connected to control unit for esample: AU SX or AU SXM control unit with Muting to form a protection system that can be composed of 1, 2, 3 or 4 single beam photocells or Mosaic. For details on the interface see AU SX, AU SXM and Mosaic control units.

The compact size of the photocells makes it possible to fit the protection system into very small spaces, while the possibility to use more photocells provides the maximum flexibility in positioning the protective beams.

All connections through M12 5-pole connectors. Unshielded cables up to 50 meter long (between sensor and control unit).

Operating temperature: 0 ... +55 °C

IP67 protection rating

APPROVALS

Safety level (with a control unit AU XS, AU SXM or Mosaic): Type 2 – SIL CL 1 – PL c – Cat. 2

- 2006/42/EC: "Machine Directive"
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- 2014/35/EU: "Low Voltage Directive"
- IEC 61496-1 (ed.3) "Safety of machinery - Electro sensitive protective equipment - General requirements and tests"
- IEC 61496-2 (ed.3) "Safety of machinery - Electro-sensitive protective equipment - Particular requirements for equipment using active opto-electronic protective devices (AOPDs)"
- ISO 13849-1:2006 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design"
- IEC 62061 (ed.1) "Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems"
- EN 50178:1997 "Electronic equipment for use in power installations"
- EN 55022:2110 "Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement"

SAFETY LEVEL
TYPE 2
SILCL 1
PL c - Cat. 2

ILION

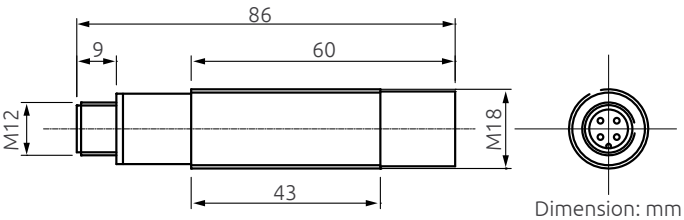
TECHNICAL FEATURES

Minimum detectable object (mm)	12
Max. range (m)	8 IL 10 20 IL 20
Number of photocells per control unit	1 ... 4 with AU SX and AU SXM control units In case of connection with Mosaic safety controller the number of photocells depends to the number available input of the system.
Response time for each photocell (ms)	7
Output	PNP - 100 mA
Signalling	Status led
Power supply (VDC)	24 ± 20%
Electrical connections	M12 4-pole
Dimensions (mm)	Ø 18 x 85

PART NUMBERS

IL 10: **1200201** IL 20: **1200202**

DIMENSIONS



Dimension: mm

ACCESSORIES

- Safety interface SR X. See page 28
- Safety interface SR XM. See page 28
- The IL FB bracket allows both vertical and horizontal adjustment of the optical axis of the photocell

  Part number: **1200090** (Set of 2 adjustable brackets)

CABLES NEEDED

M12 5-pole. Pin 5 not connected
See page 30 (CDx, CD 9x, CDM 9", CDM 99)

Ulisse is a Type 2 safety photocell with metal body and M8 3-pole connector.

The photocells must be connected to control unit for esample: standard AU SX or AU SXM control unit with Muting or Mosaic to form a protection system that can be composed of 1, 2, 3 or 4 single beam photocells. For details on the interface see AU SX, AU SXM and Mosaic control units.

Thanks to the very small size, the anodised aluminium case and the glass lenses free from electrostatic dust attraction, Ulisse is the ideal solution for the protection of weaving machines as well as of other applications characterised by high levels of mechanical stress or very restricted spaces.

All connections through M8 3-pole connectors. Unshielded cables up to 50 meter long (between sensor and control unit).

Operating temperature: 0 ... +55 °C

IP67 protection rating

APPROVALS

Safety level (with a control unit AU XS, AU SXM or Mosaic): Type 2 – SIL CL 1 – PL c – Cat. 2

- 2006/42/EC: "Machine Directive"
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- 2014/35/EU: "Low Voltage Directive"
- IEC 61496-1 (ed.3) "Safety of machinery - Electro sensitive protective equipment - General requirements and tests"
- IEC 61496-2 (ed.3) "Safety of machinery - Electro-sensitive protective equipment - Particular requirements for equipment using active opto-electronic protective devices (AOPDs)"
- ISO 13849-1:2006 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design"
- IEC 62061 (ed.1) "Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems"
- EN 50178:1997 "Electronic equipment for use in power installations"
- EN 55022:2110 "Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement"

SAFETY LEVEL
TYPE 2
SILCL 1
PL c - Cat. 2

ULISSE

TECHNICAL FEATURES

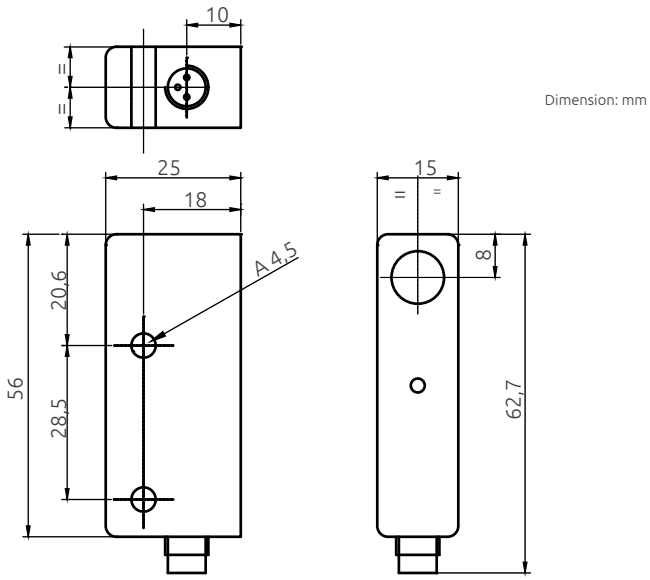
Minimum detectable object (mm)	8
Max. range (m)	6
Number of photocells per control unit	1 ... 4 In case of connection with Mosaic safety controller the number of photocells depends to the number available input of the system.
Response time for each photocell (ms)	7
Output	PNP - 100 mA
Signalling	Status led
Power supply (VDC)	24 ± 20%
Electrical connections	M8 3-pole
Max. cable length (m)	50 (between sensor and control unit)
Dimensions h x w x d (mm)	58 x 15 x 25

PART NUMBERS

UPC: **1200300**

DIMENSIONS

Dimension: mm



CABLES NEEDED

M8 3-pole. See page 31 (C8x, C 895)

ACCESSORIES

- Safety interface SR X. See page 28
- Safety interface SR XM. See page 28

Shaft version

Hollow shaft version

Safety Sin/Cos incremental encoder. Together with Mosaic, it forms a SIL 3 certified safety function for speed monitoring. Available in two models: Shaft or Hollow shaft.

APPLICATION EXAMPLE

Any applications requiring speed monitoring of a rotating axis.

Features a robust and reliable interface and the ability to handle high mechanical loads.

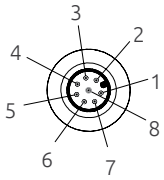
TECHNICAL FEATURES

Shaft type	Hollow shaft version Ø 12 mm Shaft version Ø 10 mm with flat surface
Fastening	Safety-Lock™ Allow high rotational speed and high shaft load capacity
Protection rate	Housing and flange side IP67, shaft IP65 (optional IP67)
Immunity to interference	Shock and vibration resistant Insensitive to strong magnetic fields
Resolution	2048 pulse rate
Power supply	SC3 24D2048R - 24 VDC SC3 05D2048R - 5 VDC SC3 24B2048R - 24 VDC SC3 05B2048R - 5 VDC
Connector	Radial M12 8-pole

APPROVALS

- 2006/42/EC "Machinery Directive"
- 2004/108/EC "Electromagnetic Compatibility (EMC)"
- EN ISO 13849-1 "Safety of machinery: Safety-related parts of control systems. Part 1: General principles for design"
- EN ISO 13849-2 "Safety of machinery: Safety-related parts of control systems. Part 2: Validation"
- IEC 61508 "Functional safety of electrical, electronic and programmable electronic safety-related systems
- EN ISO 61800-5-2 "Adjustable speed electrical power drive systems". Part 5-2 Safety requirements - Functional
- UL (C+US) mark for USA and Canada
- BGIA - Institute for Occupational Safety and Health - Germany

CONNECTORS



M12 8-pole

1 - GND
2 - + V
3 - A: Sine output
4 - Ā: Sine output
5 - B: Cosine output
6 - B̄: Cosine output
7 - N.C.
8 - N.C.
shield - PH

SAFETY LEVEL
SIL 3
SIL3 - SILCL 3
PL e - Cat. 4

PART NUMBERS

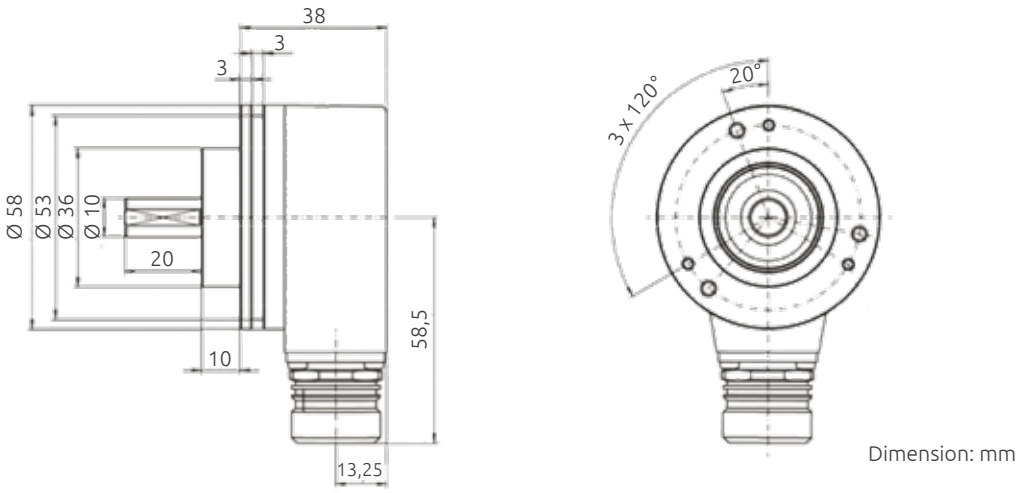
Ordering code	Description
1100102	SC3 24D2048R - 24 VDC Hollow Shaft version Ø 12 mm
1100103	SC3 05D2048R - 5 VDC Hollow Shaft version Ø 12 mm
1100104	SC3 24B2048R - 24 VDC Shaft version Ø 10 mm with flat surface
1100105	SC3 05B2048R - 5 VDC Shaft version Ø 10 mm with flat surface

CABLES NEEDED

M12 8-pole shielded. See page 33
(C8Dx SH, C8D9x SH)

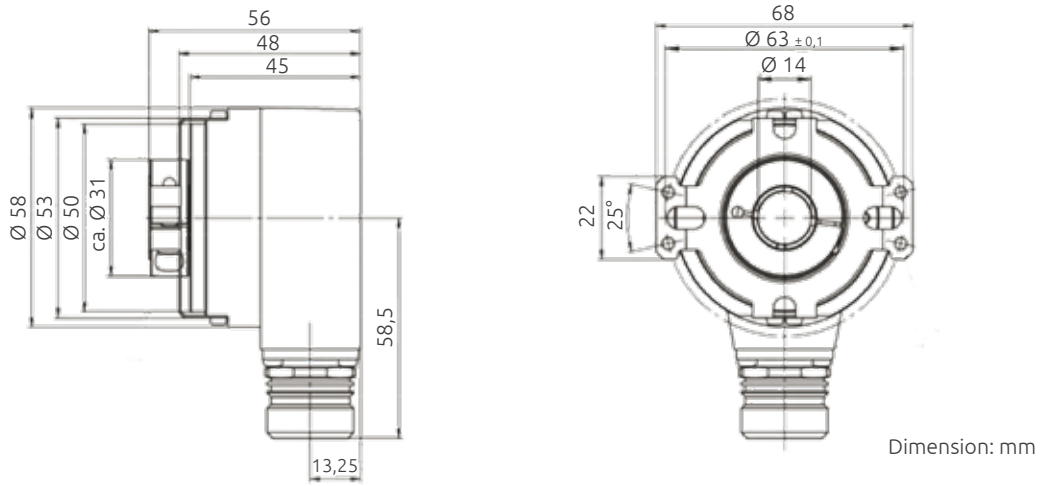
NOTE: cables supplied with M12 8-pole connector at one end only. The other side must be cut off at correct length and crimped with RJ45 connector (not included).

DIMENSIONS



Dimension: mm

Encoder, shaft version with flat surface



Dimension: mm

Hollow shaft version

SAFETY SWITCH WITH GUARD LOCKING

LOCK AND INTERLOCK SAFETY FUNCTIONS

Safelock is a safety switch utilised for the protection of personnel when opening doors leading to dangerous areas. It acts by monitoring and interrupting the safety circuit during dangerous scenarios.

The solenoid locks and unlocks access to the dangerous area, guaranteeing safety until the danger has stopped. Available models

SLK-M
Retention mechanism actuated by a spring and unlocked by ON current. Guard locking by spring force, release by applying voltage to the guard locking solenoid.

SLK-E
Retention mechanism actuated by ON current and unlocked by spring. Guard locking by applying voltage to the guard locking solenoid, release by spring force.

- Actuating head made of plastic or metal
- Auxiliary release on the front. Used for releasing the guard locking with the aid of a tool. To protect against tampering, the auxiliary release is sealed with sealing lacquer
- Approach direction: horizontal and vertical. Can be adjusted in 90° steps
- Any installation position

Operating temperature: -20 ... +55 °C

IP67 protection rating

TECHNICAL FEATURES

Housing material	Reinforced thermoplastic
Contact material	Silver alloy, gold flashed
Switching principle	Slow-action switching contact
Number of door position positively driven contacts	2
Number of guard lock monitoring positively driven contacts	1
Approach speed	Max. 20 m/min
Actuation frequency	1200 1/h
Guard locking principle	Closed-circuit current principle
Force	Locking force (Fmax): ≥1 kN (plastic), ≥2 kN (metal) Locking force (FZh): 1,5 kN 0,7 kN (plastic), 1,5 kN (metal) Retention force: 20 N Extraction force: 30 N Actuating force: 35 N
Solenoid operating voltage	AC/DC 24 V -15% ... +10%
Short circuit protection	4 A
Switching voltage	12 V Min at 10 mA
Switching current	1 mA Min at 24 V
Power consumption	6 W

APPROVALS

- 2006/42/EC: "Machine Directive"
- EN 60947-5-1:2004/A1:2009 Low-voltage switchgear and controlgear. Control/circuit devices and switching elements. Electromechanical control circuit devices
- EN 60947-5-1:2004/A1:2009 Annex K
- EN ISO 14119:2013 Safety of machinery - Interlocking devices associated with guards - Principles for design and selection

PART NUMBERS

Ordering code	Model	Guard lock	Description
1290100	SLK-M-P-2NC-24	Mechanical	Safelock with mechanical guard lock and plastic actuating head. Switching element: 2 NC, feedback 1 NC
1290102 *	SLK-M-M-2NC-24		Safelock with mechanical guard lock and metal actuating head. Switching element: 2 NC, feedback 1 NC
1290104	SLK-E-P-2NC-24	Electrical	Safelock with electrical guard lock and plastic actuating head. Switching element: 2 NC, feedback 1 NC
1290106 *	SLK-E-M-2NC-24		Safelock with electrical guard lock and metal actuating head. Switching element: 2 NC, feedback 1 NC

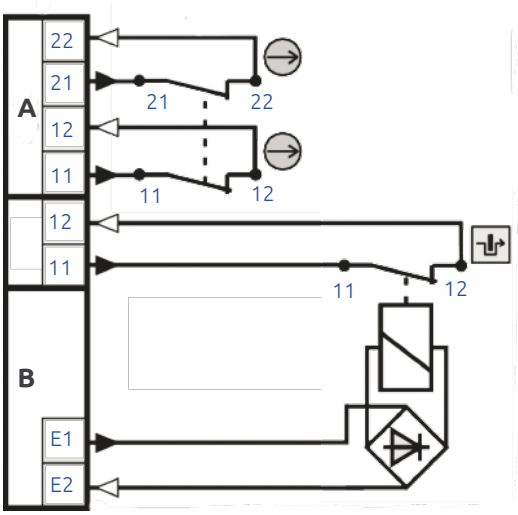
* Contact ReeR to check availability

ACTUATORS

Model		Ordering code	Description
ACT-S-S-RB		1290302	Actuator standard, straight with rubber bush Two stainless safety screws per actuator Actuators with rubber bushings
ACT-S-A-RB		1290303	Actuator standard, angled with rubber bush Two stainless safety screws per actuator
ACT-S-H-TB		1290304	Actuator standard, hinged, top-botton Actuators made of stainless steel Two stainless safety screws per actuator For doors hinged at top and bottom
ACT-S-H-LR		1290305	Actuator standard, hinged, left-right Actuators made of stainless steel Two stainless safety screws per actuator For doors hinged on right and left
ACT-F-S-RB		1290306 *	Actuator for insertion funnels, straight with rubber bush Two stainless safety screws per actuator Actuators with rubber bushings
ACT-F-A-RB		1290307 *	Actuator for insertion funnels, angled with rubber bush Two stainless safety screws per actuator Actuators with rubber bushings
ACT-F-H-TB		1290308 *	Actuator for insertion funnels, hinged, top-botton Actuators made of stainless steel Two stainless safety screws per actuator For doors hinged at top and bottom
ACT-FH-LR		1290309 *	Actuator for insertion funnels, hinged, left-right Actuators made of stainless steel Two stainless safety screws per actuator For doors hinged on right and left
ACT-F-IF		1290311 *	Insertion funnel

* Contact ReeR to check availability

BLOCK DIAGRAM



2NC Model
For monitoring the guard locking (built-in solenoid) slow-action switching contact 2 NC

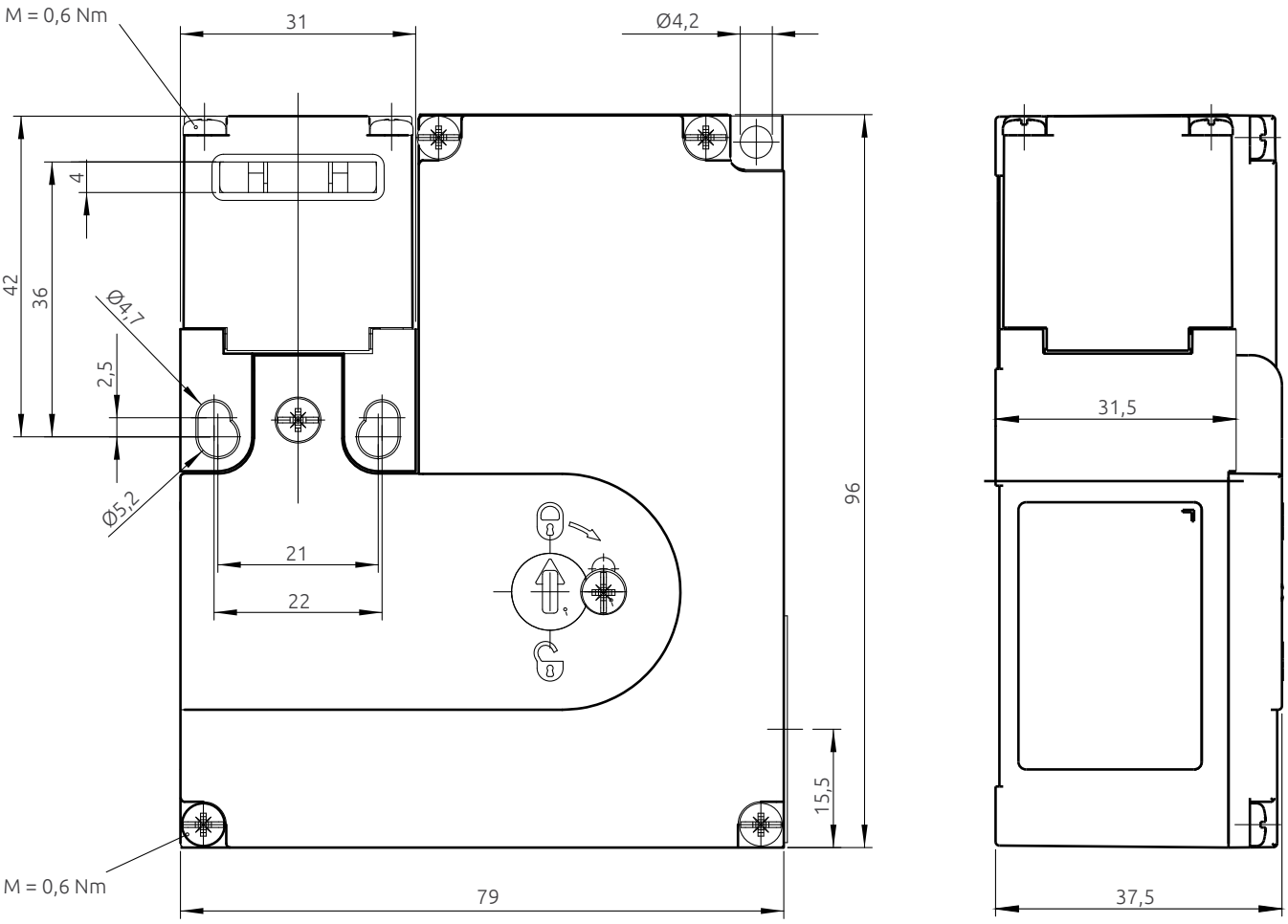
SAFETY LEVELS

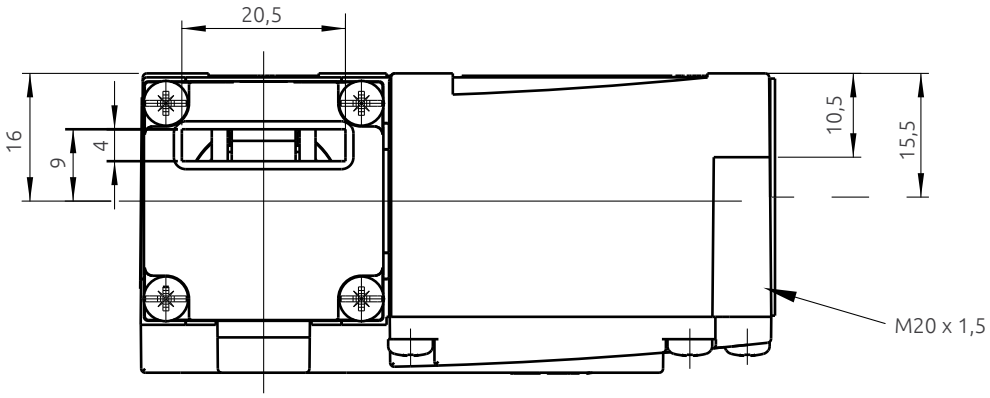
3 different safety levels according to the EN ISO 13489-1 standard

Lock function Category / Safety level	Interlock function Category / Safety level	Code	Devices
Up to Cat. 1 / PL c (Note)	Up to Cat. 1 / PL c	Low	Safelock + 1 Mosaic input or PL d safety interfaces for emergency stop buttons and safety switches ADSR3
Up to Cat. 1 / PL c (Nota)	Up to Cat. 3 / PL d	Low	Safelock + 2 Mosaic inputs or PL d safety interfaces for emergency stop buttons and safety switches ADSR3 + Fault exclusion(See note)
Up to Cat. 1 / PL c (Nota)	Up to Cat. 4 / PL e	Low	Safelock + Magnus + 4 Mosaic inputs or 1 PL e safety interfaces for emergency stop buttons and safety switches ADSR4 and 1 interface with limited test current for magnetic switches
Up to Cat. 1 / PL c (Nota)	Up to Cat. 4 / PLe	High	Safelock + Magnus RFID + 2 Mosaic inputs (only for Magnus) or Safety realy AD SR1
Up to Cat. 4 / PL e	Up to Cat. 3 / PL d	Low	2 Safelock + 2 + 1 Mosaic inputs (FBK needed) or PL d safety interfaces for emergency stop buttons and safety switches ADSR3
Up to Cat. 4 / PL e	Up to Cat. 4 / PL e	Low	2 Safelock + 4 + 2 Mosaic inputs (FBK needed) or 2 PL e safety interfaces for emergency stop buttons and safety switches ADSR4

NOTE Cat. 3 / PL d can be reached through fault exclusion. The exclusion of faults is allowed according to point 7.3 of EN ISO 13849-1 of which an extract is reported.

MECHANICAL DATA





Dimension: mm

SAFETY LEVEL
SIL 3
SIL3 - SILCL 3
PL e - Cat. 4

The new SR SELECT allows four different operating modes offering the possibility to connect and control different types of safety devices, including:

- Safety Light Curtains,
- Solid-State-Output Devices (i.e. RFID safety switches),
- Dual-Channel Emergency Stops,
- Two-Hand Controls and Type 2 Safety Photocells.

OPERATING MODES

Selectable via the Rotary Switch.

Rotary Switch position	Operating mode	Operating function
0	Prog.	Programming mode start
1	1A	OSSD double input, automatic restart mode
2	1C	OSSD double input, monitored restart mode
3	2A	Gate monitoring/Emergency stop function, automatic restart mode
4	2M	Gate monitoring/Emergency stop function, manual restart mode (not monitored)
5	2C	Gate monitoring/Emergency stop function, monitored restart mode
6	3A	Two-hand control 2 NO contacts, automatic restart mode
7	3C	Two-hand control changeover contact, monitored restart mode
8	4A	Type 2 photocells control, automatic restart mode
9	4C	Type 2 photocells control, monitored restart mode

MULTIFUNCTION SAFETY INTERFACE

TECHNICAL CHARACTERISTICS

SR SELECT

Power supply (VDC)	24 ± 20%
Power requirement (W)	5 max.
Relay output	2 NA - 6A; 250 Vca
System status output	PNP - 100 mA; 24 Vcc
Response time (ms)	≤ 20
Operating modes	Automatic, Monitored or Manual (selectable via rotary switch)
External relay control EDM	Series of contacts NC (20 mA; 24 VDC)
Connections	Terminal block with protection against reversal of polarity
LED status indicators	Input – Output – Fail
Length of connections (m)	100 Max.
Operating temperature (°C)	-30 ... +55
Protection rating	Enclosure IP 20 Terminal block IP 2X
Fastening	Fast attachment to rail according to EN 50022-35
Dimensions (h x w x d) (mm)	99 x 22,5 x 114,5
Weight (g)	150
B10d	800.000
Device lifetime (years)	20

PART NUMBER

SR Select with screw terminal: **1330941**
SR Select C with clamp terminal: **1330813**

APPROVALS

- 2006/42/EC: "Machine Directive"
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- 2014/35/EU: "Low Voltage Directive"
- IEC 61496-1:2020 "Safety of machinery - Electro sensitive protective equipment - General requirements and tests"
- IEC 61508-2010 "Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements"
- IEC 62061 + A2:2015 "Safety of machinery - Functional safety of safety-related electrical, Electronic and programmable electronic control systems
- ISO 13849-1:2015 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for desig"
- EN 55032:2015 "Electromagnetic compatibility of multimedia equipment - Emission Requirements"
- EN IEC 63000:2018 "Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances"
- UL (C+US) mark for USA and Canada
- UKCA declaration of conformity

SAFETY LEVEL
TYPE 4
SILCL 3
PL e - Cat. 4

SR ONE safety interface constitutes the dedicated interface system between the machine control circuits and OSSD output devices such as R-Safe RFID sensors.

- Guided-contact safety relays
- Manual or automatic Start/Restart
- EDM feedback input for external contactors monitoring

SAFETY LEVEL
TYPE 4
SILCL 3
PL e - Cat. 4

SR ONE M safety interface constitutes the dedicated interface system between the machine control circuits and OSSD output devices such as R-Safe RFID sensors. With integrated Muting functions

- Guided-contact safety relays
- Start/Restart interlock
- EDM feedback input for external contactors monitoring
- Sensor logic integrated Muting (0 or 24 VDC - PNP or relay - dark-on)

PART NUMBERS

SR ONE with screw terminal: **1330900**
SR ONE C with clamp terminal: **1330811**

SR ONE M with screw terminal: **1330904**
SR ONE M C with clamp terminal: **1330812**

TYPE 4 SAFETY NTERFACE FOR OSSD OUTPUT SAFETY DEVICES

TECHNICAL FEATURES

SR ONE

Safety relay outputs	2 NO - 6 A 250 VAC
Status output	PNP – 100 mA at 24 VDC
Response time (ms)	≤ 20
Start/Restart command according to IEC 61496-1	Manual or automatic Start/Restart selectable on terminal block
Status display	LED indication of input/output status and diagnosis
Power supply (VDC)	24 ± 20%
Electrical connections	On terminal blocks
Operating temperature (°C)	0 ... +55
Protection rating	IP20 for housing IP2X for terminal blocks
Fastening	DIN rail fastening according to EN 50022-35 standard
Dimensions h x w x d (mm)	99 x 22,5 x 114

SR ONE M

As the previous interface plus the following features:

Muting lamp output	24 VDC; max. 5 W
Response time (ms)	≤ 20
Status display	LED indication of input/output status, Muting sensor input and diagnosis
Input for Muting sensors	2 inputs - 0 o 24 Vcc - PNP o relè
Input for Muting enable	(0 or 24 VDC - PNP or relay)
Muting Time-out	30 sec. or infinite
Override Time-out	Max. 15 min
Override	2 operating modes selectable: manual action with hold to run or automatic with pulse command
Dimensions h x w x d (mm)	99 x 35 x 114

APPROVALS

- 2006/42/EC: "Machine Directive"
- 2011/65/EU "RoHS – Guideline
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- EN 61496-1:2020: "Safety of machinery - Electro sensitive protective equipment - General requirements and tests" - Type
- EN 61508: 2010 " Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements" - SIL
- EN 62061 + A2:2015 "Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems" - SILCL
- EN ISO 13849-1: 2015 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design" - PL
- EN 55022: 2010 "Information Technology Equipment- Radio Disturbance Characteristics- Limits and Methods of Measurement"
- EN 61000-4-3: 2006 + A1:2007 + A4:2010 "Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
- UL (C+US) mark for USA and Canada
- UKCA declaration of conformity

SAFETY LEVEL

PL e

Cat. 4

Safety relay for emergency stop buttons and safety switches monitoring.

- Guided-contact safety relays
- EDM Feedback input for external contactors monitoring
- Start/Restart can be:
  - Automatic/Manual AD SRE4
  - Manual Monitored AD SRE4C

PART NUMBERS

SR E4 with screw terminal: **1330803**
SR 4C with screw terminal: **1330804**

SR E4 C with clamp terminal: **1330808**
SR E4C C with clamp terminal: **1330809**

SAFETY LEVEL

PL e

Cat. 4
Type III C (EN 574)

- Guided-contact safety relays, input with 3 or 4 contacts for two-hand control unit.
- Certified as Type III C according to the EN 574 standard, monitors the simultaneity between the two inputs (< 0.5 sec).
- EDM Feedback input for external contactors monitoring

PART NUMBERS

SR T with screw terminal: **1330805**
SR T C with clamp terminal: **1330810**

SAFETY INTERFACES FOR EMERGENCY STOP BUTTONS AND SAFETY SWITCHES

TECHNICAL FEATURES

SR E4 - SR E4C

Safety relay outputs	2 NO - 6 A 250 VAC Each NO safety output line is interrupted twice by the two relays
Status output	PNP – 100 mA at 24 VDC
Response time (ms)	≤ 20
Start/Restart	SR E4 - Automatic/Manual SR E4C - Manual monitored
Status display	LED indication of input/output status and diagnosis
Power supply (VDC)	24 (±10%)
Electrical connection	On terminal block
Operating temperature (°C)	-25 ... +55
Protection rating	IP20 for housing IP2X for terminal blocks
Fastening	DIN rail fastening according to EN 50022-35 standard
Dimensions h x w x d (mm)	99 x 22,5 x 114

APPROVALS

See SR ONE and SR ONE M approvals

SAFETY INTERFACE FOR FOR TWO-HAND CONTROLS

TECHNICAL FEATURES

SR T

Safety relay outputs	2 NO (6 A; 250 VAC)
Response time (ms)	≤ 20
Status output	PNP – 100 mA at 24 VDC
Signalling	LED indication of input/output status and diagnosis
Power supply (VDC)	24 ± 20%
Electrical connections	On terminal block
Operating temperature (°C)	-25 ... 55
Protection rating	IP20 for housing IP2X for terminal block
Fastening	DIN rail fastening according to EN 50022-35 standard
Dimensions h x w x d (mm)	99 x 22,5 x 114

APPROVALS

See SR ONE and SR ONE M approvals

SAFETY LEVEL
TYPE 2
SILCL 1
PL c - Cat. 2

Control unit for safety photocells Ilion and Ulisse, which can be combined to form a Type 2 safety system. Up to 4 photocells may be connected.

- With guided-contact safety relays
- Start/Restart interlock
- EDM Feedback input for external contactors monitoring
- Self test every 5 seconds

SAFETY LEVEL
TYPE 2
SILCL 1
PL c - Cat. 2

Control unit, with integrated Muting functions, for safety photocells Ilion and Ulisse, which can be combined to form a Type 2 safety system. Up to 4 photocells may be connected.

- 2-sensor Muting logics
- With guided-contact safety relays
- Muting time-out selectable
- Start/Restart interlock
- EDM feedback input for external contactors monitoring
- Self test every 5 seconds

PART NUMBERS

SR X with screw terminal: **1201710**
SR XM with screw terminal: **1201711**

SR X C with clamp terminal: **1201714**
SR XM C with clamp terminal: **1201715**

SAFETY INTERFACES FOR ILION AND ULISSE PHOTOCELLS

TECHNICAL FEATURES

SR X

Safety relay outputs	2 NO - 6 A 250 VAC
Status output	PNP - 100 mA at 24 VDC
Response time (ms)	≤ 20
Start/Restart command according to IEC 61496-1	Manual or automatic Start/Restart selectable on terminal block
Signalling	LED indication of input/output status and diagnosis
Power supply (VDC)	24 ± 20%
Electrical connections	On terminal block
Operating temperature (°C)	0 ... 55
Protection rating	IP20 for housing IP2X for terminal block
Fastening	DIN rail fastening according to EN 50022-35 standard
Dimensions h x w x d (mm)	99 x 22,5 x 114

SR XM

As the previous interface plus the following features:

Inputs for Muting sensors	2 inputs 0 or 24 VDC – PNP or relay – dark-on
Muting Enable input	0 or 24 VDC – PNP or relay
Muting lamp output	24 VDC; max. 5 W
Muting time-out	30 sec. or infinite, selectable
Override	2 operating modes selectable: manual action with hold to run or automatic with pulse command
Override time-out (min)	15
Response time (ms)	≤ 30
Signalling	LED indications of input/output status, Muting sensor inputs, diagnosis
Dimensions h x w x d (mm)	99 x 35 x 114

APPROVALS

- 2006/42/EC: "Machine Directive"
- 2011/65/EU "RoHS – Guideline
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- EN 61496-1:2020: "Safety of machinery - Electro sensitive protective equipment - General requirements and tests" - Type
- EN 61508: 2010 " Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements" - SIL
- EN 62061 + A2:2015 "Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems" - SILCL
- EN ISO 13849-1: 2015 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design" - PL
- EN 55022: 2010 "Information Technology Equipment- Radio Disturbance Characteristics- Limits and Methods of Measurement"
- EN 61000-4-3: 2006 + A1:2007 + A4:2010 "Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
- UL (C+US) mark for USA and Canada
- UKCA declaration of conformity

SAFETY LEVEL
SIL 3
SIL3 - SILCL 3
PL e - Cat. 4

Guided-contact safety relays. Can only be connected to safety sensors equipped with feedback input for monitoring external relays (EDM)

Additional NC contact line for the monitoring by light curtain (EDM)

PART NUMBERS

SR ZERO with screw terminal: **1330801**
SR ZERO A with screw terminal: **1330802**

SR ZERO C with clamp terminal: **1330806**
SR ZERO A C with clamp terminal: **1330807**

SAFETY INTERFACE FOR DEVICES WITH INTEGRATED EDM

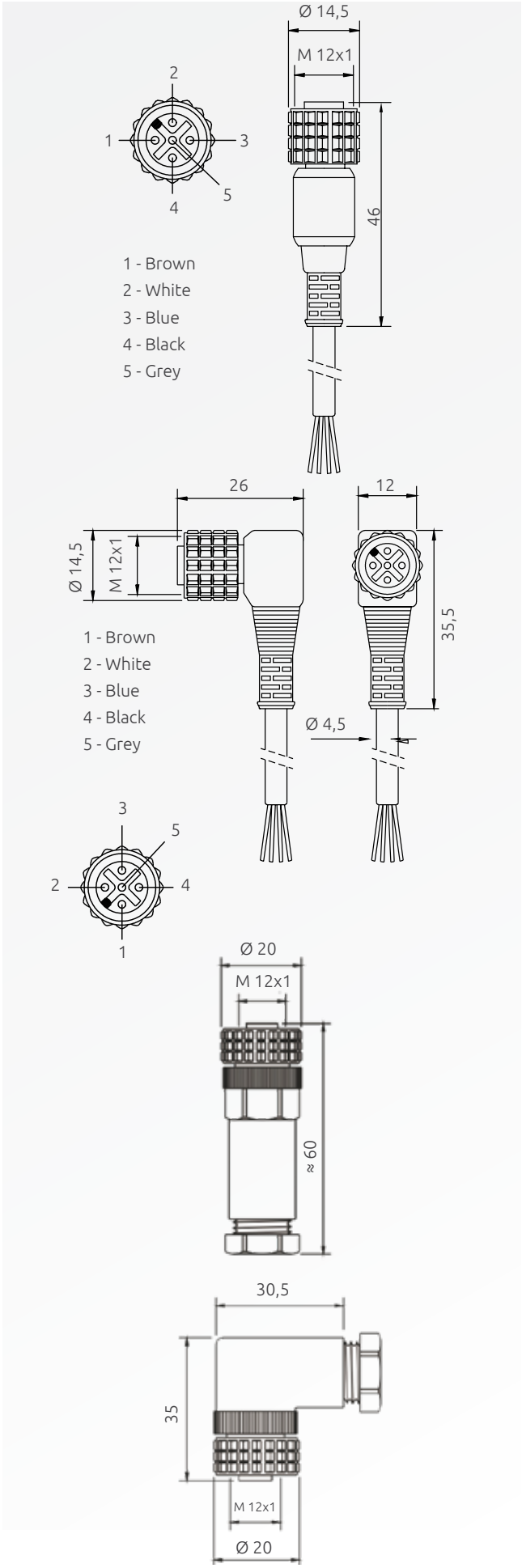
TECHNICAL FEATURES

SR ZERO - SR ZERO A

Safety relay outputs SR ZERO SR ZERO A	 2 NO (6 A; 250 VAC) 2 NO (6 A; 250 VAC)
Response time (ms)	≤ 20
Signalling	LED indication of input/output status and diagnosis
Power supply (VDC)	24 ± 20%
Electrical connections	On terminal block
Operating temperature (°C)	0 ... 55
Protection rating	IP20 for housing IP2X for terminal block
Fastening	DIN rail fastening according to EN 50022-35 standard
Dimensions h x w x d (mm)	99 x 22,5 x 114

APPROVALS

- 2006/42/EC: "Machine Directive"
- 2011/65/EU "RoHS – Guideline
- 2014/30/EU: "Electromagnetic Compatibility Directive"
- EN 61496-1:2020: "Safety of machinery - Electro sensitive protective equipment - General requirements and tests" - Type
- EN 61508: 2010 " Functional safety of electrical/electronic/ programmable electronic safety-related systems - Part 1: General requirements" - SIL
- EN 62061 + A2:2015 "Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems" - SILCL
- EN ISO 13849-1: 2015 "Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design" - PL
- UL (C+US) mark for USA and Canada
- UKCA declaration of conformity



CDx

M12 STRAIGHT CONNECTOR 5-POLE

Model	Code	Description
CD5	1330950	Pre-wired cable 5 m
CD10	1330956	Pre-wired cable 10 m
CD15	1330952	Pre-wired cable 15 m
CD20	1330957	Pre-wired cable 20 m
CD25	1330949	Pre-wired cable 25 m
CD40	1330907	Pre-wired cable 40 m
CD50	1330965	Pre-wired cable 50 m
CD80	1330936	Pre-wired cable 80 m

Cables for PI-SAFE
Cabels for R-Safe Basic with M12 connector and M12 Pigtail connector
Cables for Ilion photocells.

Note: photocells Pin 5 not connected

CD9x

M12 90° ANGLE CONNECTOR 5-POLE

Model	Code	Description
CD95	1330951	Pre-wired cable 5 m
CD910	1330958	Pre-wired cable 10 m
CD915	1330953	Pre-wired cable 15 m

Cables for Ilion photocells.

Note: Pin 5 not connected

CDM9

M12 STRAIGHT CONNECTOR 5-POLE SCREW TERMINAL, PG9 CABLE GLAND

Model	Code
CDM9	1330954

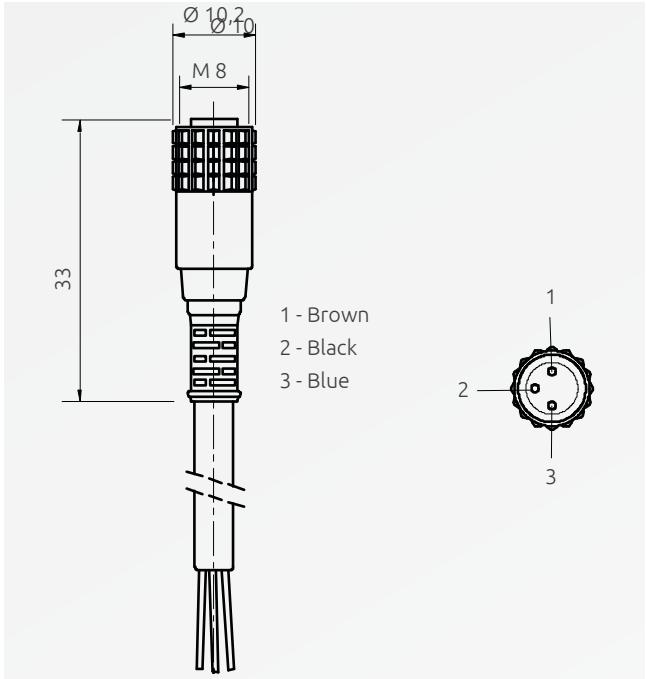
Cables for Ilion photocells.

CDM99

M12 STRAIGHT CONNECTOR 5-POLE SCREW TERMINAL, PG9 CABLE GLAND

Model	Code
CDM99	1330955

Cables for Ilion photocells.

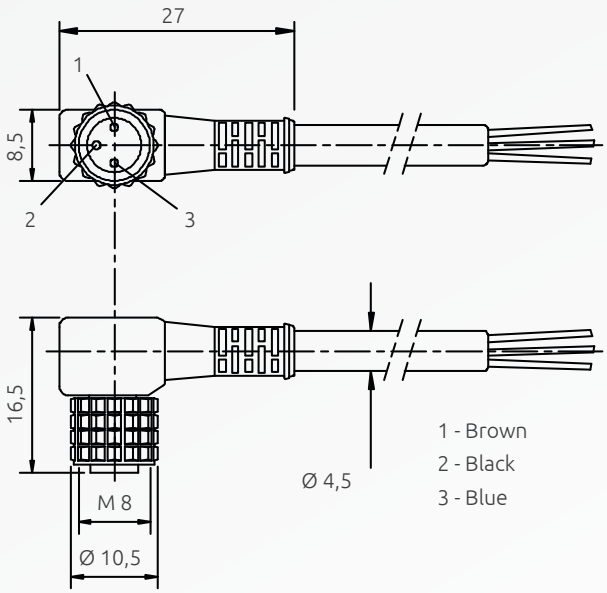


C8X

M8 STRAIGHT CONNECTOR 3-POLE

Model	Code	Description
C 85	1200217	Pre-wired cable 5 m
C 815	1200219	Pre-wired cable 15 m

Cables for Ulisse photocells.

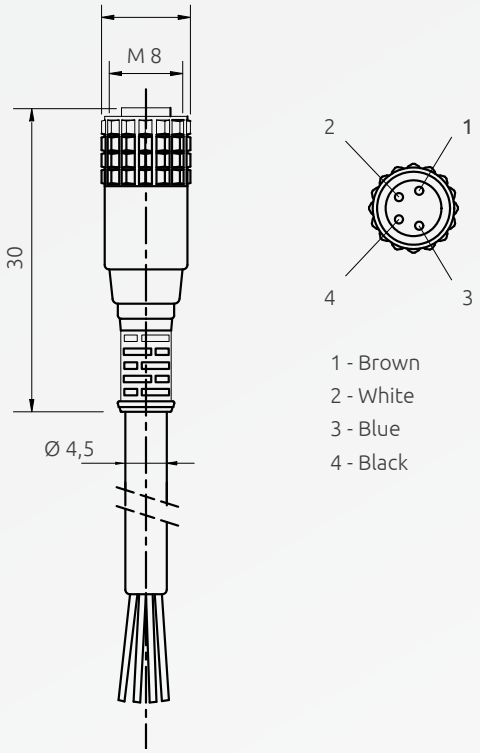


C895

M8 90° ANGLE CONNECTOR 3-POLE

Model	Code	Description
C895	1200216	Pre-wired cable 5 m

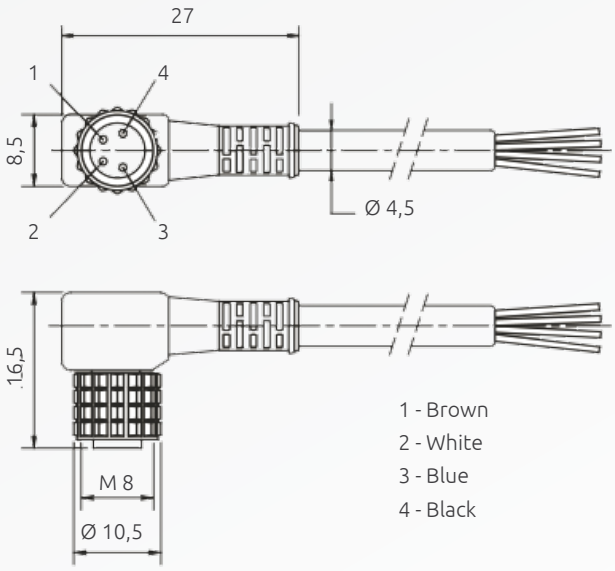
Cable for Ulisse photocells.



C8Gx
M8 STRAIGHT CONNECTOR 4-POLE

Model	Code	Description
C8G3	1291070	Pre-wired cable 3 m
C8G5	1291072	Pre-wired cable 5 m

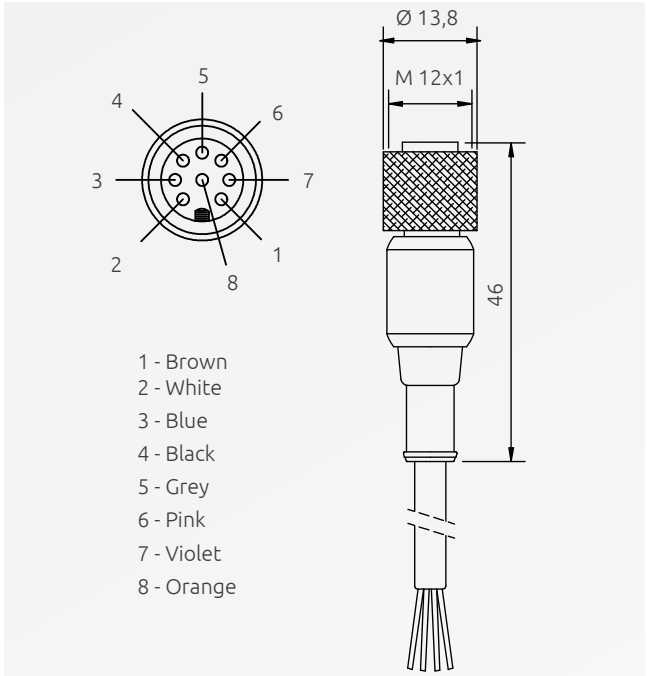
Cables for Magnus MG magnetic sensors.



C8G9x
M8 90° ANGLE CONNECTOR 4-POLE

Model	Code	Description
C8G93	1291071	Pre-wired cable 3 m
C8G95	1291073	Pre-wired cable 5 m

Cables for Magnus MG magnetic sensors.

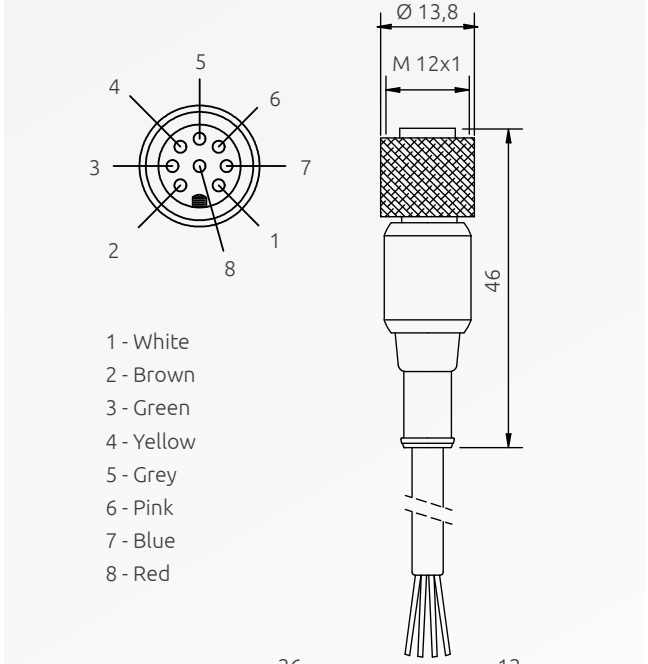


CF8Px

M12 FEMALE STRAIGHT CONNECTOR 8-POLE

Model	Code	Description
CF8P3	1295103	Pre-wired cable 3 m
CF8P5	1295104	Pre-wired cable 5 m
CF8P10	1295105	Pre-wired cable 10 m

Cables for R-Safe Plus sensors

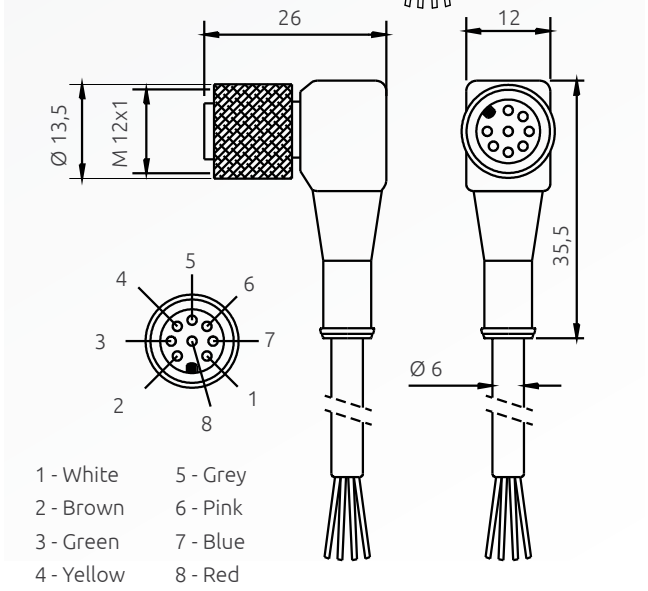


C8Dx SH

M12 STRAIGHT CONNECTOR, 8-POLE, SHIELDED

Model	Code	Description
C8D5 SH	1330930	Pre-wired shielded cable 5 m
C8D10 SH	1330931	Pre-wired shielded cable 10 m
C8D15 SH	1330932	Pre-wired shielded cable 15 m

Cables for Safecoder.

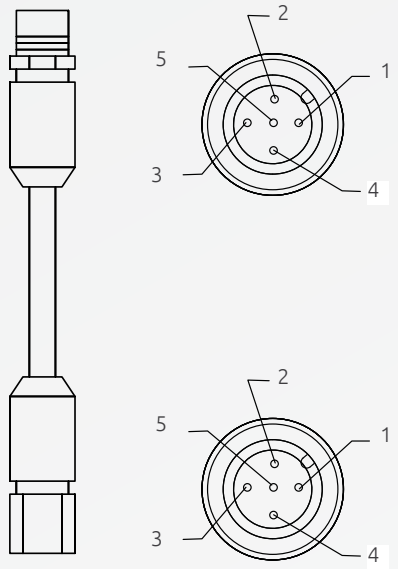


C8D9x SH

M12 90° ANGLE CONNECTOR, 8-POLE, SHIELDED

Model	Code	Description
C8D95 SH	1330933	Pre-wired shielded cable 5 m
C8D910 SX	1330934	Pre-wired shielded cable 10 m
C8D915 SH	1330935	Pre-wired shielded cable 15 m

Cables for Safecoder.



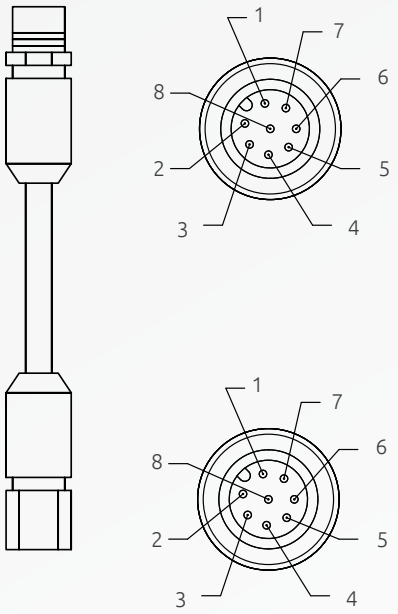
1 - Brown
2 - White
3 - Blue
4 - Black
5 - Grey

CFM5PX

MALE-FEMALE M12 STRAIGHT CONNECTOR 5-POLE

Model	Code	Description
CFM5P3	1390908	Pre-wired cable 3 m
CFM5P5	1390909	Pre-wired cable 5 m
CFM5P10	1390911	Pre-wired cable 10 m

Extension cables 5 poles for R-Safe Basic sensors



1 - Brown
2 - White
3 - Blue
4 - Black
5 - Grey
6 - Pink
7 - Violet
8 - Orange

CFM8Px

FEMALE M12 STRAIGHT CONNECTOR 8-POLE

Model	Code	Description
CFM8P3	1295100	Pre-wired cable 3 m
CFM8P5	1295101	Pre-wired cable 5 m
CFM8P10	1295102	Pre-wired cable 10 m

Extension cable for R-Safe Plus sensors.

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Founded in Turin (Italy) in 1959, ReeR distinguished itself for its strong commitment to innovation and technology.

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The Safety Division is in fact today a world leader in the development and manufacturing of safety optoelectronic sensors and controllers.

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