



## MAGNETIC SENSORS FOR CYLINDERS

**Magnetic sensors REED type with cable**

**Magnetic sensors REED type for connector**

**Magnetic sensors HALL effect with cable**

**Magnetic sensors HALL effect for connector**

**Miniaturized magnetic sensors**

- rectangular profile
- oval profile
- round profile
- round section 90° cable

## General

The limit switches, or magnetic sensors, have to be mounted on cylinders with magnetic piston. These, when hit by the magnetic field generated by the piston as it approaches, close the circuit sending an electrical signal by relè solenoid valve control, etc. or converse with the controlling electronic system situated on the machine. There are available magnetic sensor with ampulla Reed type and with Hall effect. The sensors are attached to the cylinder by a proper clamp, slot or adaptor and have an activation LED indicator.

Note: The magnetic sensors are according to the Directive **EMC 89/336/CEE** and following amendments.

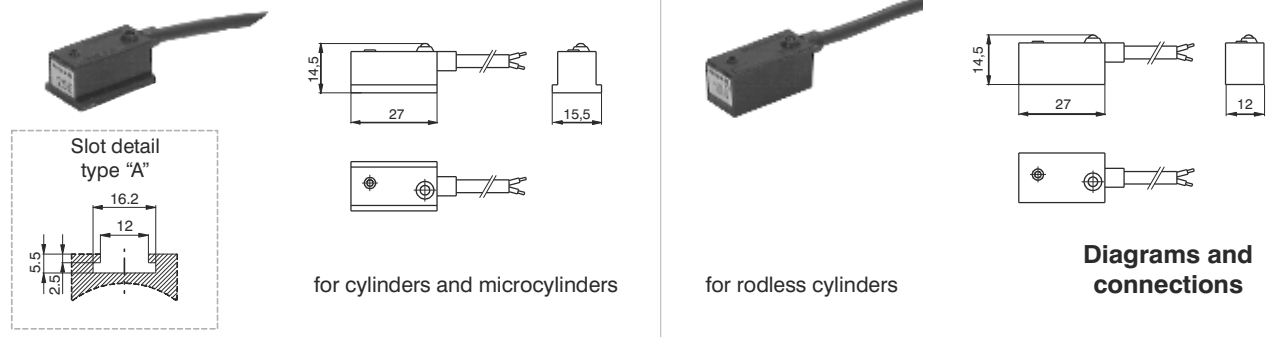
## Instruction on how to use the sensors properly

Particular attention should be paid in order not to exceed the wide operating limits shown into the next pages. Besides, the 2 wires sensors have never to be connected to the mains if a load has not been yet connected in series. These are the only cares that, if not followed, may cause damages to the sensor. Furthermore it has to be considered that, while loading, the current absorbed by the sensors might be 50% higher that the rated one.

The switch semiconductor construction design makes this sensors extremely compatible, there are no limitation to the type of load applied : inductive, capacitive resistive.

In case of direct current (DC) feeding, the polarity of the connection has to be observed: the brown cable must be connected to the plus (+) and the blue one to the minus (-). The cable length must not exceed 10mtrs. If the cable needs to be longer then 10 mt, we recommend to insert in series an inductance or a resistance to counteract the capacity generated by the cable itself .

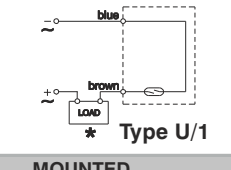
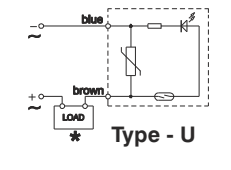
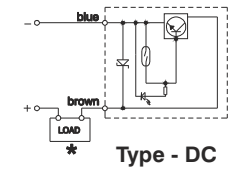
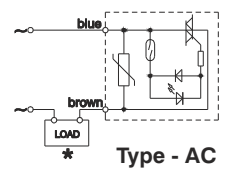
When using a two wire REED type sensor always ensure that the correct load is applied in series on any of the two wires. When using a sensor fitted with the SNAP connector pay attention to the orientation of the connector (see fig. page 6.3) because by inverting the connection the circuit will not be damaged, but the LED will not turn on. In case of two or more sensors connected in series pay attention to tension drop generated (around 3V for each sensor), and eventually use the version designed for in series connection. The Hall effect sensors, which do not include any moving mechanical parts are longer lasting if compared to the Reed version besides, there are some other external factors to be taken into consideration, such as proximity of powered cables, magnetic fields produced by electric motors, mass of iron too close to the sensor, and so on: these factors have to be therefore carefully avoided, being able to influence the sensors and accordingly to cause irregularity of operation.



**Diagrams and connections**

**Ordering code**  
**SENSORS WITH 2 WIRES CABLE (PUR Ø4.2 mm 2 x 0.34mm<sup>2</sup>)**

Cylinders and microcylinders	<b>1500.AC</b>	sensor for alternating current with led
	<b>1500.DC</b>	sensor for continuous current with led
	<b>1500. U</b>	universal sensor with led
	<b>1500.U/1</b>	universal sensor without led (REED ampulla only)
Rodless cylinders	<b>1600.AC</b>	sensor for alternating current with led
	<b>1600.DC</b>	sensor for continuous current with led
	<b>1600.U</b>	universal sensor with led
	<b>1600.U/1</b>	universal sensor without led (REED ampulla only)

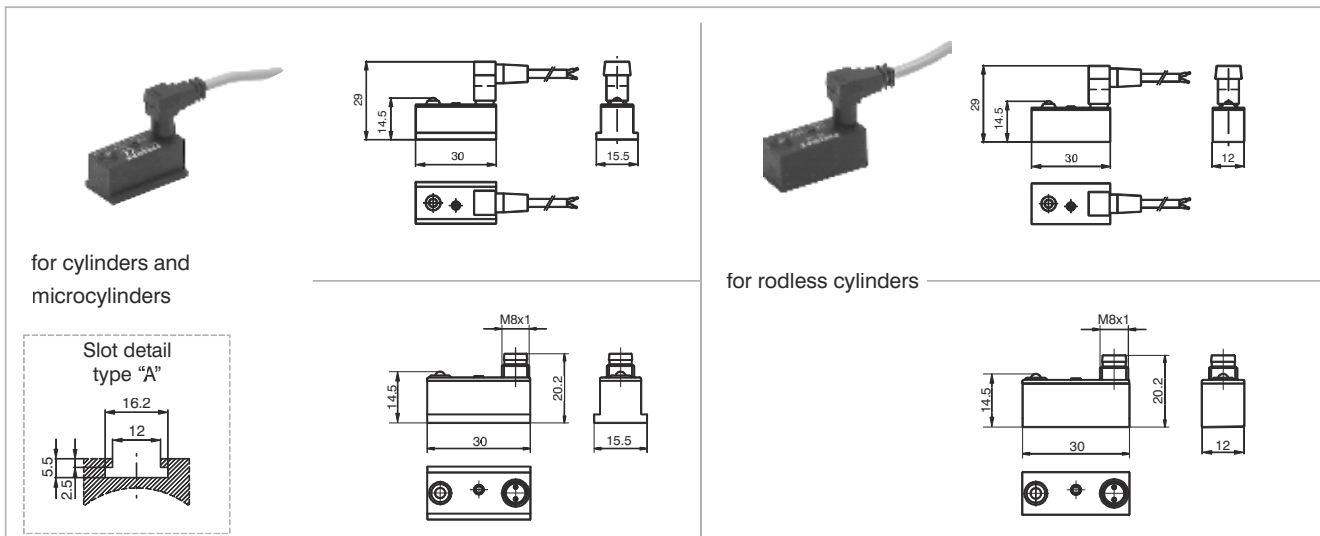


Technical characteristics	A.C.		D.C.		U		U/1	
			a.c.	d.c.	a.c.	d.c.	a.c.	d.c.
Maximum permanent current	1,5A	1,2A	0,5A		0,3A			
Maximum current (pulses of 0,5 sec.)	6A	1,5A	1A		0,8A			
Voltage range	12 - 230V	12 - 30V	3 - 230V	12 - 48V	0 - 230V	0 - 48V		
Maximum permanent power	375VA	32W	20VA	15W	10VA	8W		
Working temperature	-20° C - 70° C							
Maximum voltage drop	3V max	2V max	3V max		0V			
Cable section	2x0,34 mm <sup>2</sup> Ø4,2 mm PUR							
Degree of protection	IP 65							
Connecting time	2 ms							
Disconnecting time	1 ms							
Average working period	10 <sup>7</sup> cycles							
Repetition of intervention point	± 0,1 mm							
Type of contact	N.O.							

★ The load (LOAD) can be connected either to negative or positive pole.

These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
1200	for microcylinders with threaded end covers and "TECNO-MIR" microcylinders	with clamps code 1260.Ø.F
	for microcylinders "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
1306 - 1307 - 1308	for microcylinders "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
	for cylinders from Ø32 to Ø63	with brackets code 1306.A
	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
1319 - 1320	for cylinders Ø250 (ISO)	with brackets code 1306.D
	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
1390 - 1391	for cylinders Ø200	with brackets code 1320.F
	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
1500	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1500	Compact cylinders "Europe" (from Ø32)	directly on groove
1605	Rodless cylinders	with brackets code 1600.A



### Ordering code

#### 2 PIN SENSOR FOR SNAP CONNECTOR

Cylinders and microcylinders	<b>RS.DC</b>	sensor for continuous current with led normally open N.O.
	<b>RS.UA</b>	universal sensor with led normally open N.O.
	<b>RS.UC</b>	universal sensor with led normally closed N.C.
	<b>RS.UA/1</b>	universal sensor without led N.O. (REED ampulla only)
Rodless cylinders	<b>SRS.DC</b>	sensor for continuous current with led normally open N.O.
	<b>SRS.UA</b>	universal sensor with led N.O.
	<b>SRS.UC</b>	universal sensor with led normally closed N.C.
	<b>SRS.UA/1</b>	universal sensor without led N.O.
Cable	<b>C1</b>	connector with 2.5 m. cable 2 wires (PVC Ø3,5 mm 2x 0,25mm <sup>2</sup> )
	<b>C2</b>	connector with 5 m. cable 2 wires (PVC Ø3,5 mm 2x 0,25mm <sup>2</sup> )
	<b>C3</b>	connector with 10 m. cable 2 wires (PVC Ø3,5 mm 2x 0,25mm <sup>2</sup> )

#### 2 PIN SENSOR FOR SNAP CONNECTOR + C1 CABLE TWO WIRES (PVC Ø3.5 mm 2x0.25 mm<sup>2</sup>)

Cylinders and microcylinders	<b>RS.DCC1</b>	sensor for DC current N.O. with LED and 2.5 m. cable
	<b>RS.UAC1</b>	universal sensor with led N.O. with connector and 2.5 m. cable
	<b>RS.UCC1</b>	universal sensor with led N.C. with connector and 2.5 m. cable
	<b>RS.UAC1/1</b>	universal sensor without led N.O. with connector and 2.5 m. cable (REED ampulla only)
Rodless cylinders	<b>SRS.DCC1</b>	sensor for continuous current with led normally closed N.O. with connector and 2.5 m. cable
	<b>SRS.UAC1</b>	universal sensor with led N.O. with connector and 2.5 m. cable
	<b>SRS.UCC1</b>	universal sensor with led N.C. with connector and 2.5 m. cable
	<b>SRS.UAC1/1</b>	universal sensor without led N.O. with connector and 2.5 m. cable (REED ampulla only)

#### 2 PIN SENSOR WITH M8 CONNECTOR

Cylinders and microcylinders	<b>RS8.DC</b>	sensor for DC current N.O. with LED and M8 plug
	<b>RS8.UA</b>	universal sensor N.O. with LED and M8 plug
	<b>RS8.UC</b>	universal sensor N.C. with LED and M8 plug
Rodless cylinders	<b>SRS8.DC</b>	sensor for DC current N.O. with LED and M8 plug
	<b>SRS8.UA</b>	universal sensor N.O. with LED and M8 plug
	<b>SRS8.UC</b>	universal sensor N.C. with LED and M8 plug
Cable	<b>MCH1</b>	cable 3 wires l=2.5m with M8 connector three wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )
	<b>MCH2</b>	cable 3 wires l=5m with M8 connector three wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )
	<b>MCH3</b>	cable 3 wires l=10m with M8 connector three wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )

### 3 PIN SENSOR FOR SNAP CONNECTOR WITH TWO WIRES ACCORDING TO IEC 947 NORMS

Cylinders and microcylinders	<b>RS.DCNO</b>	sensor for continuous current with led normally open N.O., according to standard IEC 947
	<b>RS.UANO</b>	universal sensor with led normally open N.O., according to standard IEC 947
Cable	<b>C1NO</b>	connector with 2.5 m. cable, according to standard IEC 947 (PVC Ø3.5 mm 2x0.25 mm <sup>2</sup> )
	<b>C2NO</b>	connector with 5 m. cable, according to standard IEC 947 (PVC Ø3.5 mm 2x0.25 mm <sup>2</sup> )
	<b>C3NO</b>	connector with 10 m. cable, according to standard IEC 947 (PVC Ø3.5 mm 2x0.25 mm <sup>2</sup> )

### 3 PIN SENSORS FOR IN SERIES ASSEMBLING WITH SNAP CONNECTOR

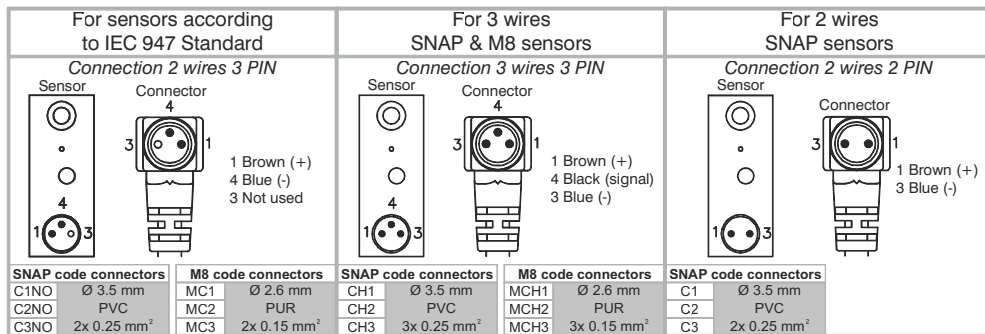
Cylinders and microcylinders	<b>RS.UA/1L</b>	universal sensor with led normally open N.O., for series assembly (3 wires)
Rodless cylinders	<b>SRS.UA/1L</b>	universal sensor with led N.O., for series assembly (3 wires)
Cable	<b>CH1</b>	connector with 2.5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
	<b>CH2</b>	connector with 5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
	<b>CH3</b>	connector with 10 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )

### 3 PIN SENSORS FOR IN SERIES ASSEMBLING WITH SNAP CONN. + CH1 CABLE 3 WIRES (PVC Ø3.5mm 3x0.25 mm<sup>2</sup>)

Cylinders and microcylinders	<b>RS.UACH1/1L</b>	universal sensor with led N.O. with connector and 2.5 m. cable, for series mounting (3 wires)
Rodless cylinders	<b>SRS.UACH1/1L</b>	universal sensor with led N.O. with connector and 2.5 m. cable, for series assembly (3 wires)

### 3 PIN SENSORS FOR IN SERIES ASSEMBLING WITH M8 CONNECTOR

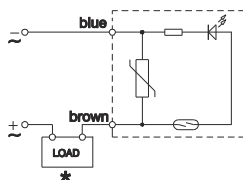
Cylinders and microcylinders	<b>RS8.UA/1L</b>	universal sensor N.O. with LED for in series assembling (3wires) and M8 plug
Rodless cylinders	<b>SRS8.UA/1L</b>	universal sensor N.O. with LED for in series assembling (3wires) and M8 plug
Cable	<b>MCH1</b>	M8 connector with 2.5 m. cable 3 wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )
	<b>MCH2</b>	M8 connector with 5 m. cable 3 wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )
	<b>MCH3</b>	M8 connector with 10 m. cable 3 wires (PUR Ø2.6 mm 3x 0.15 mm <sup>2</sup> )



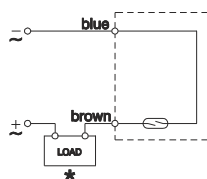
Technical characteristics	DC	UA				UA/1L		UA/1	
		a.c.		d.c.		a.c.	d.c.	a.c.	d.c.
Type of contact	N.O.	N.O.	N.C.	N.O.	N.C.	N.O.		N.O.	
Maximum permanent current	1.2A	0.5A	0.3A	0.5A	0.3A	0.5A		0.5A	
Maximum current (pulses of 0.5 sec.)	1.5A	1A	0.8A	1A	0.8A	1A		1A	
Voltage range	12 - 30V	3 - 250V	3 - 110V	12 - 48V		24V		0 - 250V	0 - 48V
Maximum permanent power	32W	20VA	10VA	15W	8W	20VA	15W	10VA	8W
Working temperature		-20°C - 70°C							
Maximum voltage drop	2V	<3V				0V			
Cables number		2				3		2	
Degree of protection		IP65							
Connecting time		2 ms							
Disconnecting time		1 ms							
Average working period		10 <sup>7</sup> cycles							
Repetition of intervention point		±0.1 mm							

Diagrams and connections

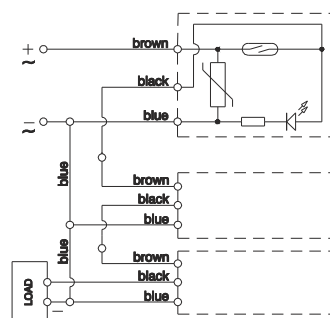
Type - UA



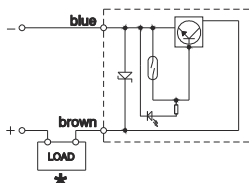
Type UA/1



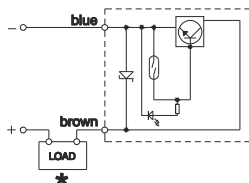
Type - UA/1L



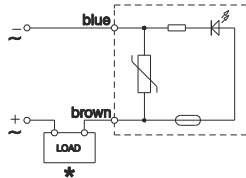
Type - DC



Type - DCNO



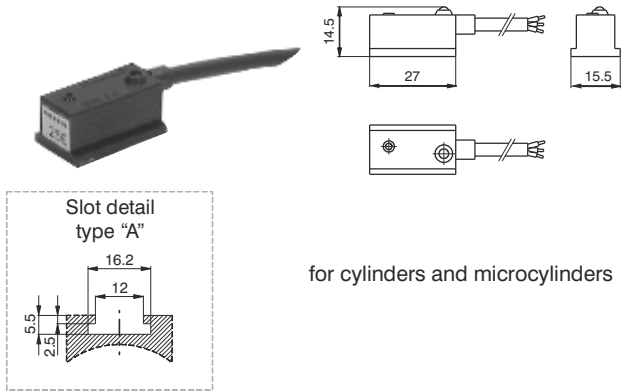
Type - UC



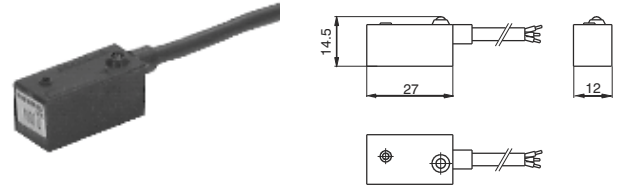
★The load (LOAD) can be connected either to negative or positive pole.

These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
1200	for microcylinders with threaded end covers and "TECNO-MIR" microcylinders	with clamps code 1260.Ø.F
	for microcylinders "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
1306 - 1307 - 1308	for microcylinders "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
	for cylinders from Ø32 to Ø63	with brackets code 1306.A
	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
1319 - 1320	for cylinders Ø250 (ISO)	with brackets code 1306.D
	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
1390 - 1391	for cylinders Ø200	with brackets code 1320.F
	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
1500	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1605	Compact cylinders "Europe" (from Ø32)	directly on groove
	Rodless cylinders	with brackets code 1600.A



for cylinders and microcylinders



for rodless cylinders

**Ordering code**

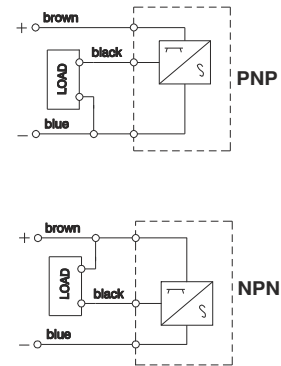
**SENSORS WITH 3 WIRES CABLE (PUR Ø 4.2 mm 3x0.34mm<sup>2</sup>)**

Cylinders and microcylinders	<b>1500.HAP</b>	PNP sensor Hall effect with led, normally open N.O.
	<b>1500.HAN</b>	NPN sensor Hall effect with led, normally open N.O.
Rodless cylinders	<b>1600.HAP</b>	PNP sensor Hall effect with led, normally open N.O.
	<b>1600.HAN</b>	NPN sensor Hall effect with led, normally open N.O.

**Technical characteristics**

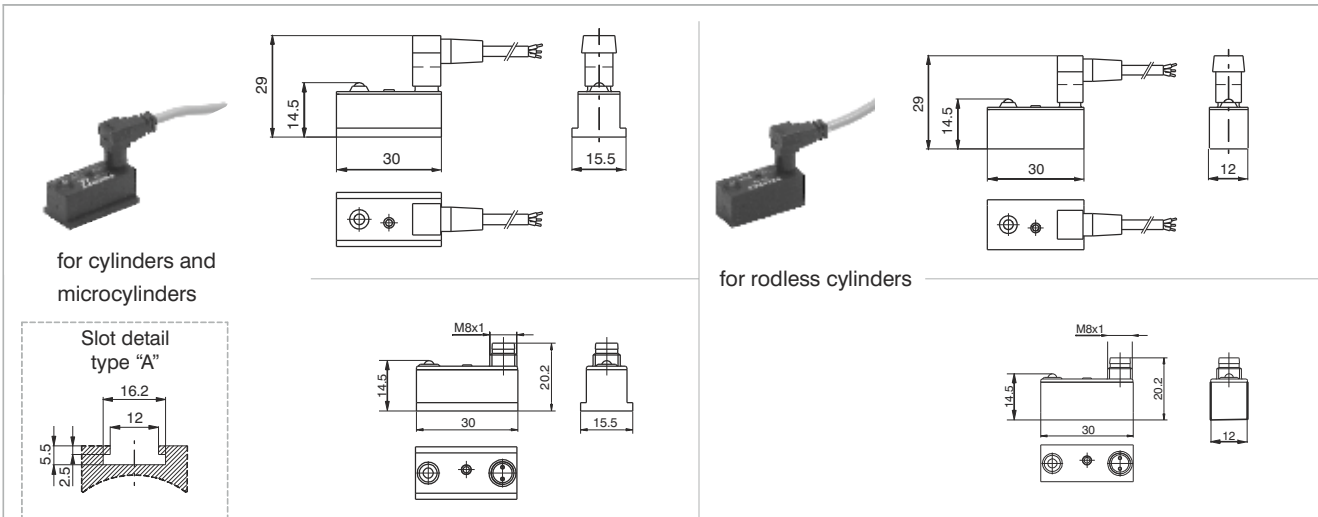
Maximum permanent current	0.5A
Voltage range	10 - 30V DC
Power (inductive load)	10W
Maximum voltage drop	2V
Working temperature	-20°C - 70°C
Cable section	PUR 4.2mm 3x0.34 mm <sup>2</sup>
Degree of protection	IP 65
Connecting time	0.8 μs
Disconnecting time	0.3 μs
Average working period	10 <sup>9</sup> cycles
Repetition of intervention point	± 0.1 mm
Type of contact	N.O.

**Diagrams and connections**



**These sensors can be used on cylinders series:**

SERIES	DESCRIPTION	MOUNTED
<b>1200</b>	for microcylinders with threaded end covers and "TECNO-MIR" microcylinders	with clamps code 1260.Ø.F
	for microcylinders "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
	for microcylinders "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
<b>1306 - 1307 - 1308</b>	for cylinders from Ø32 to Ø63	with brackets code 1306.A
	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
	for cylinders Ø250 (ISO)	with brackets code 1306.D
<b>1319 - 1320</b>	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
<b>1390 - 1391</b>	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
<b>1500</b>	Compact cylinders "Europe" (from Ø32)	directly on groove
<b>1605</b>	Rodless cylinders	with brackets code 1600.A



**Ordering code**

**3 PIN SENSOR FOR SNAP CONNECTOR**

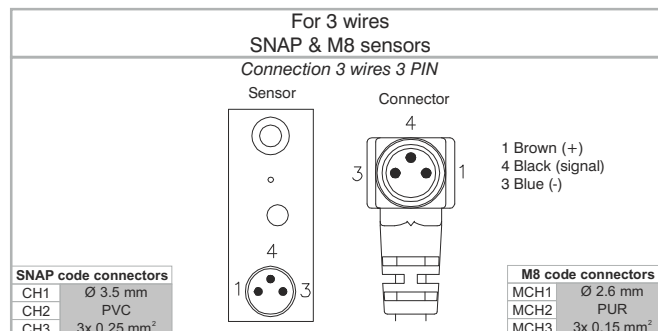
Cylinders and microcylinders	<b>HS.PA</b>	PNP sensor Hall effect with led, normally open N.O.
Rodless cylinders	<b>SHS.PA</b>	PNP sensor Hall effect with led, normally open N.O.
Cable	<b>CH1</b>	connector with 2.5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
	<b>CH2</b>	connector with 5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
	<b>CH3</b>	connector with 10 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )

**3 PIN SENSOR FOR SNAP CONNECTOR + CH1 CABLE 3 WIRES (PVC Ø3.5 mm 3x0.25 mm<sup>2</sup>)**

Cylinders and microcylinders	<b>HS.PAC1</b>	PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable
Rodless cylinders	<b>SHS.PAC1</b>	PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable

**3 PIN SENSOR FOR M8 CONNECTOR**

Cylinders and microcylinders	<b>HS8.NA</b>	NPN Hall effect sensor N.O. with LED and M8 plug
	<b>HS8.PA</b>	PNP Hall effect sensor N.O. with LED and M8 plug
Rodless cylinders	<b>SHS8.NA</b>	NPN Hall effect sensor N.O. with LED and M8 plug
	<b>SHS8.PA</b>	PNP Hall effect sensor N.O. with LED and M8 plug
Cable	<b>MCH1</b>	M8 connector with cable 2.5 m. 3 wires (PUR Ø2.6 mm 3x0.15mm <sup>2</sup> )
	<b>MCH2</b>	M8 connector with cable 5 m. 3 wires (PUR Ø2.6 mm 3x0.15mm <sup>2</sup> )
	<b>MCH3</b>	M8 connector with cable 10 m. 3 wires (PUR Ø2.6 mm 3x0.15mm <sup>2</sup> )

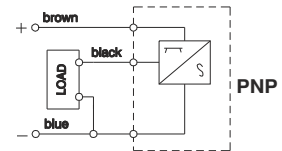
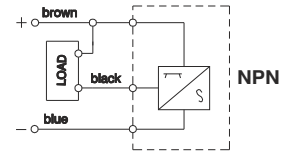




**Technical characteristic**

Maximum permanent current	0,25A
Voltage range	6 - 30V DC
Power (inductive load)	6W
Maximum Voltage drop	2V
Working temperature	-20°C - 70°C
Cables number	3
Degree of protection	IP 65
Connecting time	0,8 ms
Disconnecting time	0,3 ms
Average working period	10 <sup>9</sup> cycles
Repetition of intervention point	± 0,1 mm
Contact normally open	N.O.

**Diagrams and connections**



These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
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	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
1390 - 1391	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1500	Compact cylinders "Europe" (from Ø32)	directly on groove
1605	Rodless cylinders	with brackets code 1600.A

## General

The limit switches, or magnetic sensors, have to be mounted on cylinders with magnetic piston. These, when hit by the magnetic field generated by the piston as it approaches, close the circuit sending an electrical signal by relè solenoid valve control, etc. or converse with the controlling electronic system situated on the machine. There are available magnetic sensor with ampulla Reed type and with Hall effect. The sensors are attached to the cylinder by a proper clamp, slot or adaptator and have an activation LED indicator.

Note: The magnetic sensors are according to the Directive **EMC 89/336/CEE** and following amendments.

## Instruction on how to use the sensors properly

Particular attention should be paid in order not to exceed the wide operating limits shown into the next pages. Besides, the 2 wires sensors have never to be connected to the mains if a load has not been yet connected in series. These are the only cares that, if not followed, may cause damages to the sensor. Furthermore it has to be considered that, while loading, the current absorbed by the sensors might be 50% higher that the rated one. The switch semiconductor construction design makes this sensors extremely compatible, there are no limitation to the type of load applied : inductive, capacitive resistive. In case of direct current (DC) feeding, the polarity of the connection has to be observed: the brown cable must be connected to the plus (+) and the blue one to the minus (-). The cable length must not exceed 10mtrs. If the cable needs to be longer then 10 mt, we recommend to insert in series an inductance or a resistance to counteract the capacity generated by the cable itself. When using a two wire REED type sensor always ensure that the correct load is applied in series on any of the two wires. In case of two or more sensors connected in series pay attention to tension drop generated (around 3V for each sensor), and eventually use the 3 wire REED version designed for in series connection. The Hall effect sensors, which do not include any moving mechanical parts are longer lasting if compared to the Reed version besides, there are some other external factors to be taken into consideration, such as proximity of powered cables, magnetic fields produced by electric motors, mass of iron too close to the sensor, and so on: these factors have to be therefore carefully avoided, being able to influence the sensors and accordingly to cause irregularity of operation.

**Sensor with 2.5 m. cable**

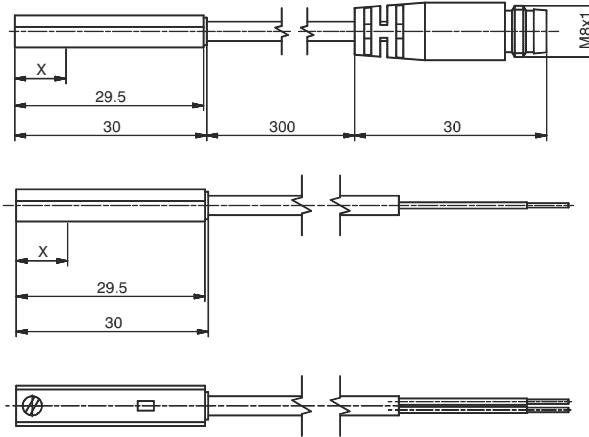


Weight gr. 27

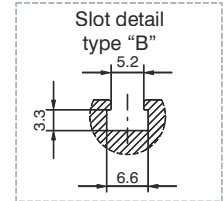
**Sensor with cable and M8 connector**



Weight gr. 15



X= point of commutation



**Sensor ordering codes**

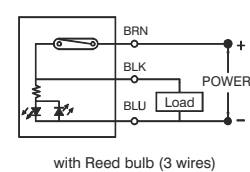
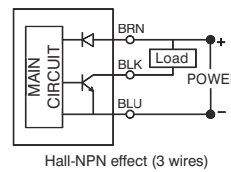
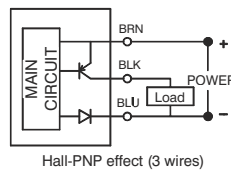
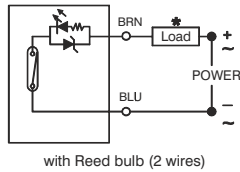
**Ampulla Reed sensors, with led, Universal, N.O. (Normally open)** X=point of commutation

<b>1580.U</b>	(2 wires) cable 2.5 mt.	15 mm
<b>MRS.U</b>	(2 wires) cable 300 mm, M8 connector (use MC1 or MC2 connectors)	15 mm
<b>1580.UAP</b>	PNP (3 wires) cable 2.5 mt.	15 mm
<b>MRS.UAP</b>	PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors)	15 mm

**Hall effect sensors, with led, DC, N.O. (Normally open)** X=point of commutation

<b>1580.HAP</b>	PNP (3 wires) cable 2.5 mt.	8 mm
<b>1580.HAN</b>	NPN (3 wires) cable 2.5 mt.	8 mm
<b>MHS.P</b>	PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors)	8 mm

**Diagrams and connections**



\* The load (LOAD) can be connected either to negative or positive pole

Technical characteristics	1580.U	MRS.U	1580.UAP	MRS.UAP	1580.HAP	1580.HAN	MHS.P
Type of contact	N.O.						
Output type	PNP			NPN		PNP	
Maximum current	14 VA - 10 W		4 VA - 3 W		3 W		
Maximum permanent power	5 - 230V DC/AC		5 - 30V DC/AC		10 - 30 V DC/AC		
Voltage range	3.5 V		0V **		2 V		
Working temperature	2 x 0.14		2 x 0.14		3 x 0.14		
Maximum voltage drop	Ø3.3mm PUR		Ø3.3mm PUR		Ø3.3 mm PUR		
Cable section (mm <sup>2</sup> )	IP 67						
Degree of protection							

\*\* Even if one sensor generates a voltage drop very close to 0 Volts, we suggest to connect no more than 30 sensors in series.

**Cable ordering code**

**Connection 2 wires**

- MC1** cable 2 wires l=2.5m with M8 connector
- MC2** cable 2 wires l=5m with M8 connector
- MC3** cable 2 wires l=10m with M8 connector

Connector



Sensor



- 1 Brown (+)
- 4 Blue (-)
- 3 Not use

**Connection 3 wires**

- MCH1** cable 3 wires l=2.5m with M8 connector
- MCH2** cable 3 wires l=5m with M8 connector
- MCH3** cable 3 wires l=10m with M8 connector

Connector



Sensor



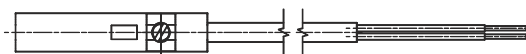
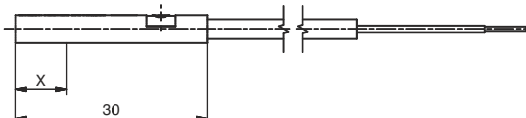
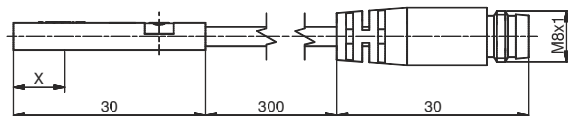
- 1 Brown (+)
- 4 Black (signal)
- 3 Blue (-)

**Sensor with 2.5 m. cable**

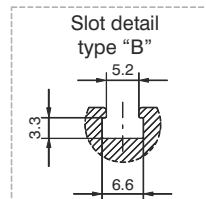

Weight gr. 27

**Sensor with cable and M8 connector**


Weight gr. 15



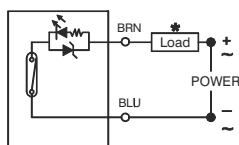
X= point of commutation


**Sensor ordering codes**
**Ampulla Reed sensors, with led, Universal, N.O. (Normally open)**

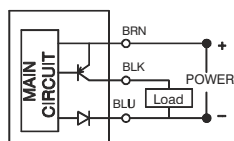
Code	Description	X=point of commutation
1590.U	(2 wires) cable 2.5 mt.	8 mm
LRS.U	(2 wires) cable 300 mm, M8 connector (use MC1 or MC2 connectors)	8 mm
1590.UAP	PNP (3 wires) cable 2.5 mt.	8 mm
LRS.UAP	PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors)	8 mm

**Hall effect sensors, with led, DC, N.O. (Normally open)**

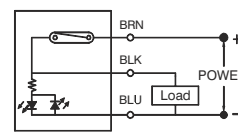
Code	Description	X=point of commutation
1590.HAP	PNP (3 wires) cable 2.5 mt.	6 mm
LHS.P	PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors)	6 mm

**Diagrams and connections**


with Reed bulb (2 wires)



Hall-PNP effect (3 wires)



with Reed bulb (3 wires)

\* The load (LOAD) can be connected either to negative or positive pole

Technical characteristics	1590.U	LRS.U	1590.UAP	LRS.UAP	1590.HAP	LHS.P
Type of contact	N.O.					
Maximum current	100mA		500mA		200mA	
Maximum permanent power	14 VA - 10 W		14 VA - 10 W		6 W	
Voltage range	5 - 30V DC/AC		10 - 30 V DC/AC		10 - 30 V DC	
Working temperature	-10°C - +70°C					
Maximum voltage drop	3 V		0V **		1.5 V	
Cable section (mm <sup>2</sup> )	2 x 0.14 Ø3 mm PUR		3 x 0.14 Ø3 mm PUR			
Degree of protection	IP 67					

\*\* Even if one sensor generates a voltage drop very close to 0 Volts, we suggest to connect no more than 30 sensors in series.

**Cable ordering code**
**Connection 2 wires**

Connector



Sensor


 1 Brown (+)  
4 Blue (-)  
3 Not use

- MC1 cable 2 wires l=2.5m with M8 connector
- MC2 cable 2 wires l=5m with M8 connector
- MC3 cable 2 wires l=10m with M8 connector

**Connection 3 wires**

Connector



Sensor


 1 Brown (+)  
4 Black (signal)  
3 Blue (-)

- MCH1 cable 3 wires l=2.5m with M8 connector
- MCH2 cable 3 wires l=5m with M8 connector
- MCH3 cable 3 wires l=10m with M8 connector

Sensor with 2.5 m. cable

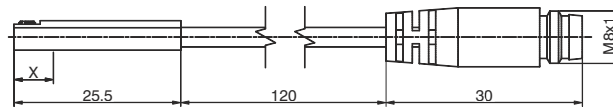


Weight gr. 22

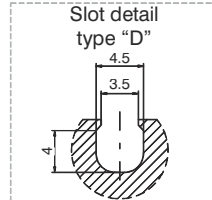
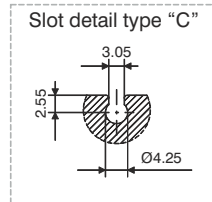
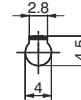
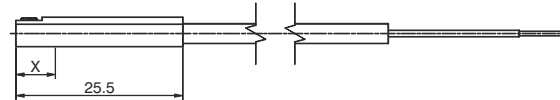
Sensor with cable and M8 connector



Weight gr. 10



X= point of commutation



Sensor ordering codes

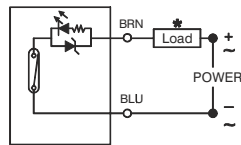
**Ampulla Reed sensors, with led, Universal, N.O. (Normally open)** | X=point of commutation

<b>1581.U</b>	(2 wires) cable 2.5 mt.	10 mm
<b>TRS.U</b>	(2 wires) cable 100 mm, M8 connector (use MC1 or MC2 connectors)	10 mm

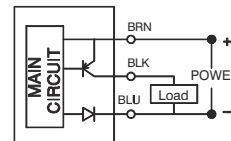
**Hall effect sensors, with led, DC, N.O. (Normally open)** | X=point of commutation

<b>1581.HAP</b>	PNP (3 wires) cable 2.5 mt.	7.5 mm
<b>THS.P</b>	PNP (3 wires) cable 100 mm, M8 connector (use MCH1 or MCH2 connectors)	7.5 mm

Diagrams and connections



with Reed bulb (2 wires)



Hall-PPN effect (3 wires)

\* The load (LOAD) can be connected either to negative or positive pole

Technical characteristics	1581.U	TRS.U	1581.HAP	THS.P
Type of contact	N.O.			
Maximum current	50mA			
Maximum permanent power	8 VA - 1,5 W		1,5 W	
Voltage range	5 - 30V DC/AC		10 - 30 V DC	
Working temperature	-10°C - +70°C			
Maximum voltage drop	3,5 V		1 V	
Cable section (mm <sup>2</sup> )	2 x 0,14 Ø2,8 mm PUR		3 x 0,14 Ø2,8 mm PUR	
Degree of protection	IP 67			

Cable ordering code

Connection 2 wires

- MC1** cable 2 wires l=2.5m with M8 connector
- MC2** cable 2 wires l=5m with M8 connector
- MC3** cable 2 wires l=10m with M8 connector

Connector



Sensor



- 1 Brown (+)
- 4 Blue (-)
- 3 Not use

Connection 3 wires

- MCH1** cable 3 wires l=2.5m with M8 connector
- MCH2** cable 3 wires l=5m with M8 connector
- MCH3** cable 3 wires l=10m with M8 connector

Connector



Sensor



- 1 Brown (+)
- 4 Black (signal)
- 3 Blue (-)

**Sensor with cable**

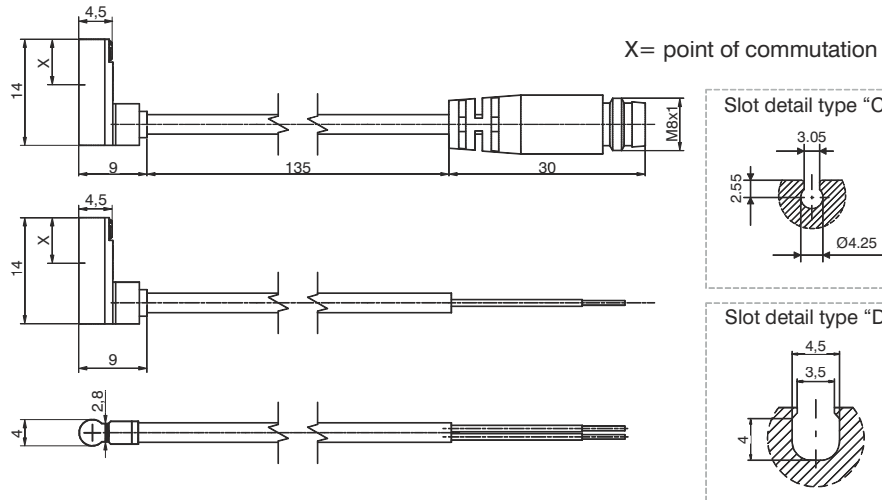


Weight gr. 22

**Sensor with cable and M8 connector**



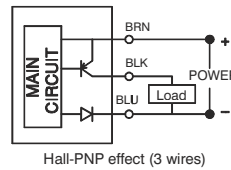
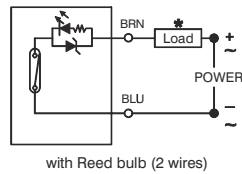
Weight gr. 10



**Sensor ordering codes**

Ampulla Reed sensors, with led, DC, N.O. (Normally open)		X=point of commutation
<b>1583.DC</b>	(2 wires) cable 2 mt.	6 mm
Hall effect sensors, with led, N.O. (Normally open)		X=point of commutation
<b>1583.HAP</b>	PNP (3 wires) cable 3 mt.	6 mm
<b>THR.P</b>	PNP (3 wires) cable 100 mm, M8 connector (use MCH1 or MCH2 connectors)	6 mm

**Diagrams and connections**



\* The load (LOAD) can be connected either to negative or positive pole

TECHNICAL CHARACTERISTICS	1583.DC	1583.HAP	THR.P
Type of contact	N.O.		
Maximum current	20mA		50mA
Maximum permanent power	0,6 W		1,5 W
Voltage range	10 - 28V DC		4,5 - 28 V DC
Working temperature	-10°C - +70°C		
Maximum voltage drop	3,5 V		0,5 V
Cable	Ø2,6 mm PVC - 2 m		Ø2,6 mm PVC - 3 m
Degree of protection	IP 67		

**Cable ordering code**

6

- MCH1** cable 3 wires l=2.5m with M8 connector
- MCH2** cable 3 wires l=5m with M8 connector

**Connection 3 wires**

Connector



Sensor



- 1 Brown (+)
- 4 Black (signal)
- 3 Blue (-)

**Rectangular section version (for sensor slot type "B")**

SERIES	DESCRIPTION	MOUNTED
1200	Microcylinders with threaded end covers and "TECNO-MIR" microcylinders Microcylinders "MIR" with rolled end covers Microcylinders "MIR-INOX" with rolled end covers	with clamps code 1260.Ø.FS with clamps code 1280.Ø.FS with clamps code 1280.Ø.FSX
1319 - 1320 1325 - 1345 1330 - 1332 1348 - 1349	for cylinders Ø32 - Ø40 for cylinders Ø50 - Ø63 for cylinders Ø80 - Ø100	with brackets code 1320.AS with brackets code 1320.BS with brackets code 1320.CS
1386-87 / 1396-97	Cylinders according to standard ISO 15552 ECOPLUS	directly on groove
1390-1391	Cylinders according to standard ISO 15552 ECOLIGHT <b>Warning:</b> To use only into the lateral slot, from Ø32 to Ø63 cylinders. (do not use into the 2 slots positioned on the side of feeding connection)	directly on groove
1370-1373	Cylinders ECOFLAT	directly on groove
1500	Short stroke compact cylinders	with adapter code 1380.01F
	Compact cylinders "Europe"	from Ø12 to Ø25: directly on groove from Ø32 to Ø50: directly on groove or with adapter 1380.01F from Ø63 to Ø100: with adapter cod. 1380.01F
	Compact cylinder according to standard ISO 21287 ECOMPACT	directly on groove
1605	Rodless cylinders	with adapter code 1600.B
6100	Guided compact cylinder (Ø20 - Ø63)	directly on groove
6101	Heavy duty guided shortstroke cylinder	
6200	Twin rod slides units	
6210	Push/pull twin rod slides units	
6301	Pneumatic grippers, angular standard version	
6303	180° angular gripper rack & pinion style	
6310	Parallel style pneumatic grippers standard version (Ø10)	
6311	Parallel style pneumatic grippers wide opening	
6312	3 finger parallel style pneumatic grippers (Ø32 - Ø125)	



**Oval section version (for sensor slot type "B")**

SERIES	DESCRIPTION	MOUNTED
1386-87 / 1396-97	Cylinders according to standard ISO 15552 ECOPLUS	directly on groove
1390-1391	Cylinders according to standard ISO 15552 ECOLIGHT	directly on groove
1370-1373	Cylinders ECOFLAT	directly on groove
1500	Compact cylinders "Europe"	from Ø12 to Ø25: directly on groove
	Compact cylinder according to standard ISO 21287 ECOMPACT	directly on groove
6100	Guided compact cylinder (Ø20 - Ø63)	directly on groove
6101	Heavy duty guided shortstroke cylinder	
6200	Twin rod slides units	
6210	Push/pull twin rod slides units	
6301	Pneumatic grippers, angular standard version	
6303	180° angular gripper rack & pinion style	
6310	Parallel style pneumatic grippers standard version (Ø10)	
6311	Parallel style pneumatic grippers wide opening	
6312	3 finger parallel style pneumatic grippers (Ø32 - Ø125)	
6411	Single rack rotary actuators	



**Round section version (for sensor slot type "C" and "D")**

SERIES	DESCRIPTION	MOUNTED
6100	Guided compact cylinder (Ø12 - Ø16)	directly on groove
6302	Pneumatic grippers, 180° angular	
6310	Parallel style pneumatic grippers standard version (Ø10 and Ø16)	
6312	3 finger parallel style pneumatic grippers (Ø16 - Ø25)	
6400	Double rack rotary actuators with turn table	
6420	Vane type rotary actuators (from Ø10 to Ø40)	
6500	Arbitrary mount cylinders	
6600	Slide cylinders	
6700	Guide cylinders	



**Round section 90° cable version (for sensor slot type "C" and "D")**

SERIES	DESCRIPTION	MOUNTED
6420	Vane type rotary actuators	directly on groove





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