



Series SA

General

The limit switches, or magnetic sensors, must 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 to relay, solenoid valve or converse with the controlling electronic system of the machine. There are both ampulla Reed and Hall effect magnetic sensor available. The sensors are attached to the cylinder by a proper clamp, slot or adapter and may 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 in 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. Besides, please consider that, while loading, the current absorbed by the sensors might be 50% higher than the rated one.

In case of direct current (DC) feeding, the polarity of the connection must be observed: the brown cable must be connected to the plus (+) and the blue one to the minus (-).

For all sensors, particular attention has to be paid to external factors (like, for example, nearby live cables, electromagnetic fields generated by electric motors, nearby metallic bodies, etc.) since they can affect the magnetic field generated by the magnet inside the piston and therefore causing malfunctions.

Electrical cable length must be kept below 10 meters in order to guarantee proper functioning.

If needed, 10 meters cable length can be exceeded; Pneumax suggests the use of an inductor or resistor in series to the load in order to reduce the capacitive behavior of the cable.

In this case, the customer is responsible for the selection of the inductor or resistor value. Pneumax assume no responsibility in case of malfunction.

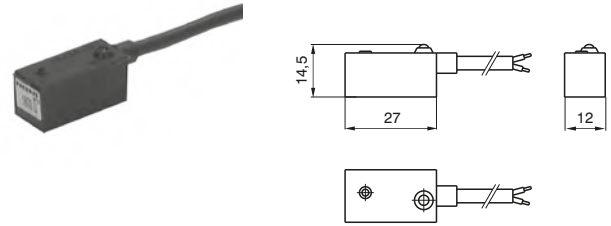
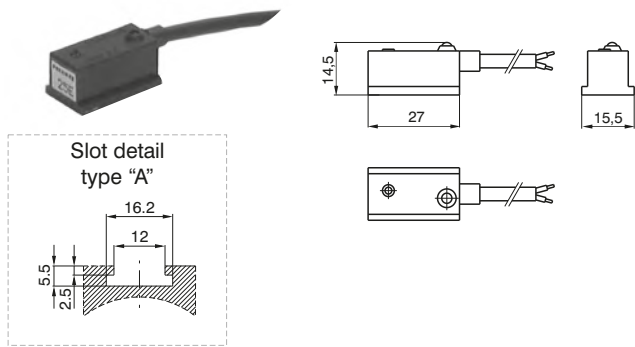
When using a two wire Reed type sensor always ensure that the correct load is applied in series on any of the two wires.

When using a sensor fitted with the SNAP connector pay attention to the orientation of the connector (see fig. page 6.6) because by inverting the connection the circuit will not be damaged, but the LED will not turn on. In case two or more sensors need to be connected in series, pay attention to the voltage drop generated (around 3V for each sensor), and, in case, use the version designed for in series connection.

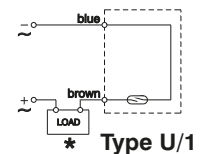
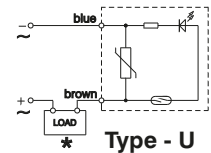
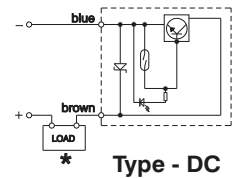
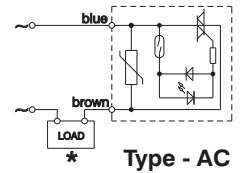
Hall effect sensors are longer lasting if compared to the Reed version since they do not include any moving mechanical part.



► Sensors with 2 wires cable (PUR Ø4,2 mm 2x0,34 mm²)



Diagrams and connections



Ordering code

| | | |
|-----------------------------------|-----------------|--|
| Cylinders and microbore cylinders | 1500.AC | sensor for alternating current with led |
| | 1500.DC | sensor for continuous current with led |
| | 1500. U | universal sensor with led |
| | 1500.U/1 | universal sensor without led (REED ampulla only) |
| Rodless cylinders | 1600.AC | sensor for alternating current with led |
| | 1600.DC | sensor for continuous current with led |
| | 1600.U | universal sensor with led |
| | 1600.U/1 | universal sensor without led (REED ampulla only) |

| Technical characteristics | A.C. | D.C. | U | | U/1 | |
|--------------------------------------|---------------------------------------|----------|----------|----------|----------|---------|
| | | | 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 ² Ø4,2 mm PUR | | | | | |
| Degree of protection | IP 65 | | | | | |
| Connecting time | 2 ms | | | | | |
| Disconnecting time | 1 ms | | | | | |
| Average working period | 10 ⁷ 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.

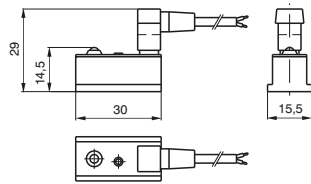
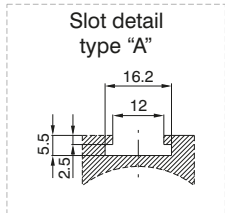
These sensors can be used on cylinders series:

| SERIES | DESCRIPTION | MOUNTED |
|---------------------------|---|----------------------------|
| 1200 | for microbore with threaded end covers and "TECNO-MIR" microbore | with clamps code 1260.Ø.F |
| | for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32 | with clamps code 1280.Ø.F |
| | for microbore "MIR-INOX" with rolled end covers | with clamps code 1280.Ø.FX |
| 1306 - 1307 - 1308 | 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 |
| 1315 | for cylinders Ø250 and Ø320 (ISO) | with brackets code 1306.D |
| | for cylinders Ø32 and Ø40 | with brackets code 1320.A |
| 1319 - 1320 | 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 |
| | for cylinders ECOLIGHT Ø32 and Ø40 | with brackets code 1390.A |
| 1390 - 1391 | 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 |
| | Compact cylinders "Europe" (from Ø32) | directly on groove |
| 1605 | Rodless cylinders | with brackets code 1600.A |

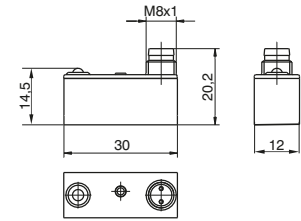
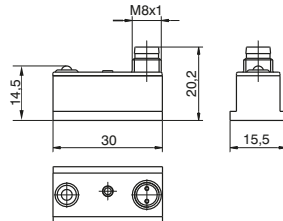
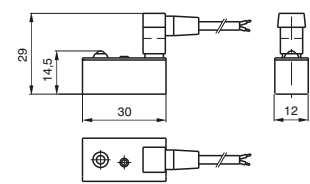
2 pin sensor for SNAP connector



for cylinders and microbore



for rodless cylinders



Ordering code

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

2 pin sensor for SNAP connector + C1 cable 2 wires (PVC Ø3.5 mm 2x0.25 mm²)

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

2 pin sensor with M8 connettor

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



► 3 pin sensor for SNAP connector with 2 wires according to IEC 947 norms

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

► 3 pin sensors for in series assembling with SNAP connector

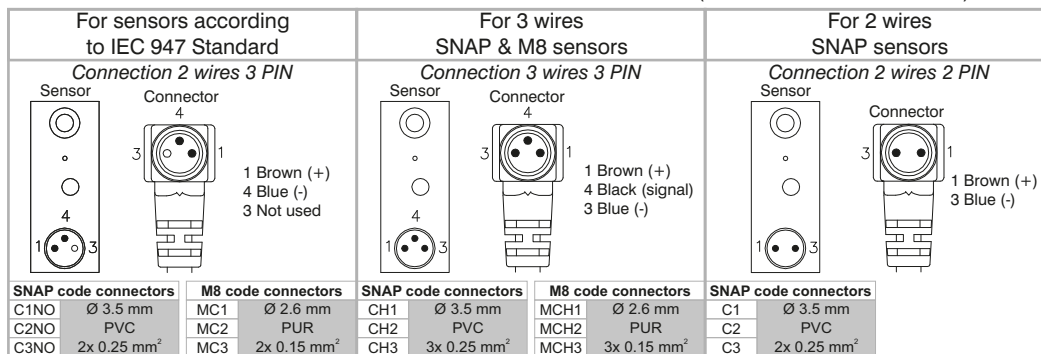
| | | |
|--|------------------|---|
| Cylinders and microbore Rodless cylinders | RS.UA/1L | universal sensor with led normally open N.O., for series assembly (3 wires) |
| | SRS.UA/1L | universal sensor with led N.O., for series assembly (3 wires) |
| Cable | CH1 | connector with 2.5 m. cable 3 wires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

► 3 pin sensors for in series assembling with SNAP conn. + CH1 cable 3 wires (PVC ø3.5mm 3x0.25 mm²)

| | | |
|-------------------------|---------------------|---|
| Cylinders and microbore | RS.UACH1/1L | universal sensor with led N.O. with connector and 2.5 m. cable, for series mounting (3 wires) |
| Rodless cylinders | SRS.UACH1/1L | 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

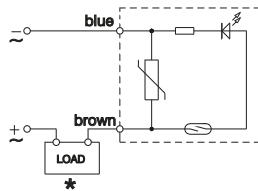
| | | |
|--|-------------------|---|
| Cylinders and microbore Rodless cylinders | RS8.UA/1L | universal sensor N.O. with LED for in series assembling (3wires) and M8 plug |
| | SRS8.UA/1L | universal sensor N.O. with LED for in series assembling (3wires) and M8 plug |
| Cable | MCH1 | M8 connector with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



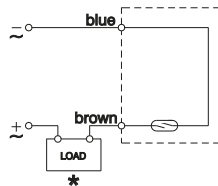
| Technical characteristics | DC | UA | | | | UA/1L | | UA/1 | |
|--------------------------------------|----------|------------------------|----------|----------|------|-------|------|----------|---------|
| | | a.c. | | d.c. | | a.c. | d.c. | a.c. | d.c. |
| Type of contact | N.O. | N.O. | N.C. | N.O. | 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 ⁷ cycles | | | | | | | |
| Repetition of intervention point | | ±0.1 mm | | | | | | | |

Diagrams and connections

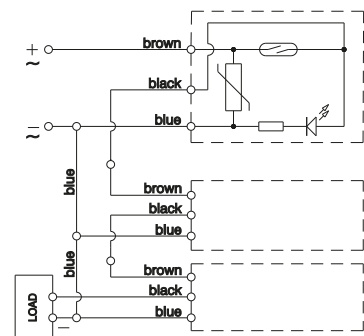
Type - UA



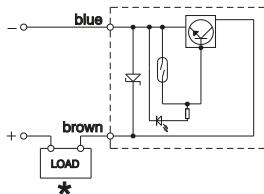
Type UA/1



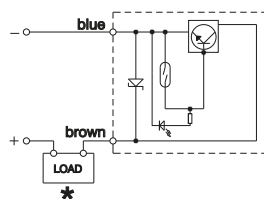
Type - UA/1L



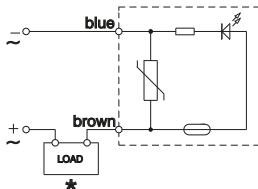
Type - DC



Type - DCNO



Type - UC

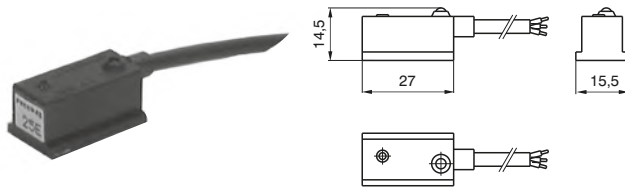


*The load (LOAD) can be connected either to negative or positive pole.

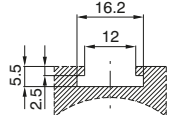
These sensors can be used on cylinders series:

| SERIES | DESCRIPTION | MOUNTED |
|--------------------|---|----------------------------|
| 1200 | for microbore with threaded end covers and "TECNO-MIR" microbore | with clamps code 1260.Ø.F |
| | for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32 | with clamps code 1280.Ø.F |
| 1306 - 1307 - 1308 | for microbore "MIR-INOX" with rolled end covers | with clamps code 1280.Ø.FX |
| | for cylinders from Ø32 to Ø63 | with brackets code 1306.A |
| 1315 | 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 and Ø320 (ISO) | with brackets code 1306.D |
| | for cylinders Ø32 and Ø40 | with brackets code 1320.A |
| 1390 - 1391 | for cylinders Ø50 and Ø63 | with brackets code 1320.B |
| | for cylinders Ø80 and Ø100 | with brackets code 1320.C |
| 1500 | for cylinders Ø125 | with brackets code 1320.D |
| | for cylinders Ø160 | with brackets code 1320.E |
| 1605 | for cylinders Ø200 | with brackets code 1320.F |
| | for cylinders ECOLIGHT Ø32 and Ø40 | with brackets code 1390.A |
| 1605 | for cylinders ECOLIGHT Ø50 and Ø63 | with brackets code 1390.B |
| | for cylinders ECOLIGHT Ø80 and Ø100 | with brackets code 1390.C |
| 1605 | for cylinders ECOLIGHT Ø125 - Ø200 | with brackets code 1390.D |
| | Compact cylinders "Europe" (from Ø32) | directly on groove |
| 1605 | Rodless cylinders | with brackets code 1600.A |

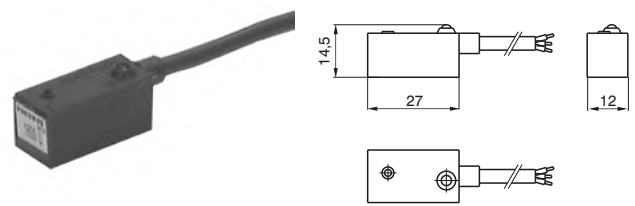
► Sensors with 3 wires cable PUR \varnothing 4.2 mm 3x0.34mm²)



Slot detail type "A"



for cylinders and microbore



for rodless cylinders

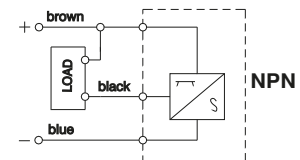
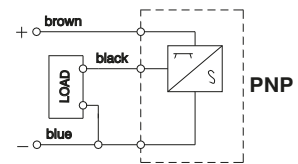
Ordering code

| | | |
|-------------------------|-----------------|---|
| Cylinders and microbore | 1500.HAP | PNP sensor Hall effect with led, normally open N.O. |
| | 1500.HAN | NPN sensor Hall effect with led, normally open N.O. |
| Rodless cylinders | 1600.HAP | PNP sensor Hall effect with led, normally open N.O. |
| | 1600.HAN | 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 ² |
| Degree of protection | IP 65 |
| Connecting time | 0.8 μ s |
| Disconnecting time | 0.3 μ s |
| Average working period | 10 ⁹ cycles |
| Repetition of intervention point | \pm 0.1 mm |
| Type of contact | N.O. |

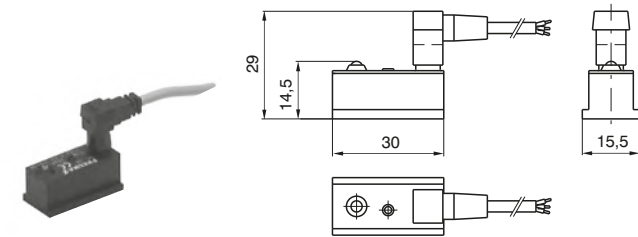
Diagrams and connections



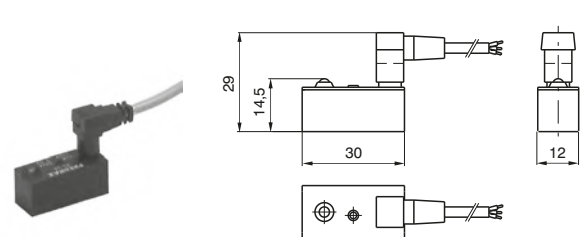
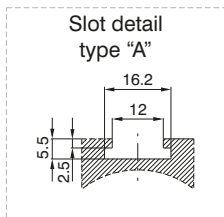
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| | for microbore "MIR-INOX" with rolled end covers | with clamps code 1280.Ø.FX |
| 1306 - 1307 - 1308 | for cylinders from Ø32 to Ø63 | with brackets code 1306.A |
| | for cylinders from Ø80 to Ø125 | with brackets code 1306.B |
| 1315 | for cylinders from Ø160 to Ø200 | with brackets code 1306.C |
| | for cylinders Ø250 and Ø320 (ISO) | with brackets code 1306.D |
| 1319 - 1320 | 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 |
| | for cylinders ECOLIGHT Ø32 and Ø40 | with brackets code 1390.A |
| 1390 - 1391 | 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 |

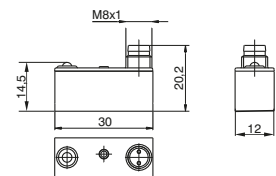
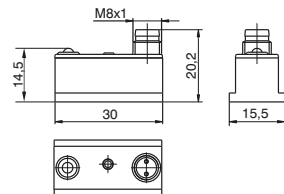
3 PIN sensor for SNAP connector



for cylinders and microbore



for rodless cylinders



Ordering code

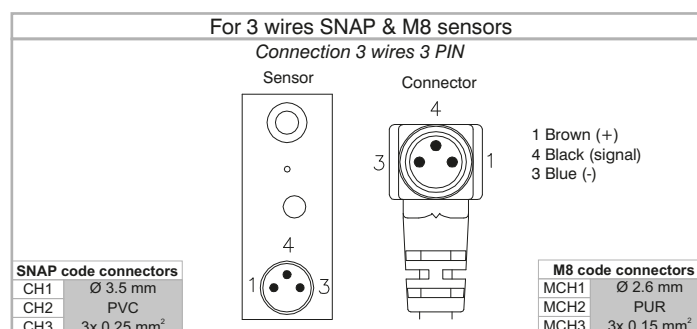
| | | |
|------------------------------|---------------|---|
| Cylinders and microcylinders | HS.PA | PNP sensor Hall effect with led, normally open N.O. |
| Rodless cylinders | SHS.PA | PNP sensor Hall effect with led, normally open N.O. |
| Cable | CH1 | connector with 2.5 m. cable 3 wires (PVC Ø3.5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

3 PIN sensor for SNAP connector + CH1 cable 3 wires (PVC ø3.5 mm 3x0.25 mm²)

| | | |
|-------------------------|-----------------|---|
| Cylinders and microbore | HS.PAC1 | PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable |
| Rodless cylinders | SHS.PAC1 | PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable |

3 PIN sensor for M8 connector

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

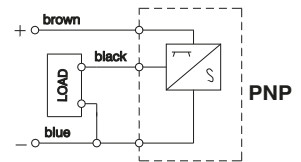
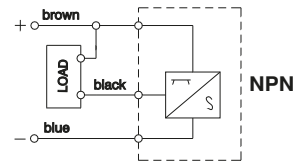




Technical characteristic

| | |
|----------------------------------|------------------------|
| 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 ⁸ 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 |
|---------------------------|---|----------------------------|
| 1200 | for microbore with threaded end covers and "TECNO-MIR" microbore | with clamps code 1260.Ø.F |
| | for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32 | with clamps code 1280.Ø.F |
| 1306 - 1307 - 1308 | for microbore "MIR-INOX" with rolled end covers | with clamps code 1280.Ø.FX |
| | for cylinders from Ø32 to Ø63 | with brackets code 1306.A |
| 1315 | 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 and Ø320 (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 |



Series SR - SU - SQ - ST

General

The limit switches, or magnetic sensors, must 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 to relay, solenoid valve or converse with the controlling electronic system of the machine. There are both ampulla Reed and Hall effect magnetic sensor available. The sensors are attached to the cylinder by a proper clamp, slot or adapter and may 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 in 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. Besides, please consider that, while loading, the current absorbed by the sensors might be 50% higher that the rated one.

In case of direct current (DC) feeding, the polarity of the connection must be observed: the brown cable must be connected to the plus (+) and the blue one to the minus (-).

For all sensors, particular attention has to be paid to external factors (like, for example, nearby live cables, electromagnetic fields generated by electric motors, nearby metallic bodies, etc.) since they can affect the magnetic field generated by the magnet inside the piston and therefore causing malfunctions.

Electrical cable length must be kept below 10 meters in order to guarantee proper functioning.

If needed, 10 meters cable length can be exceeded; Pneumax suggests the use of an inductor or resistor in series to the load in order to reduce the capacitive behavior of the cable.

In this case, the customer is responsible for the selection of the inductor or resistor value. Pneumax assume no responsibility in case of malfunction.

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 two or more sensors need to be connected in series, pay attention to the voltage drop generated (around 3V for each sensor), and, in case, use the version designed for in series connection.

Hall effect sensors are longer lasting if compared to the Reed version since they do not include any moving mechanical part.

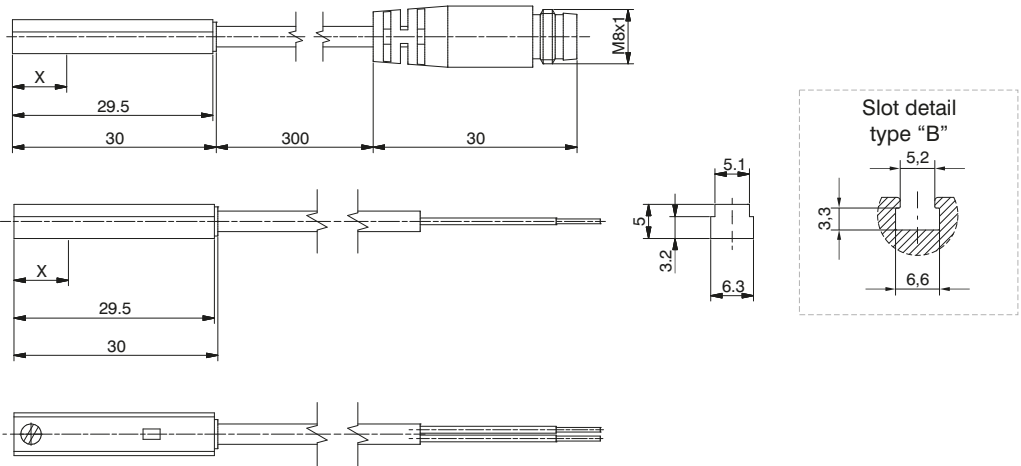


► Sensor with 2.5 m. cable

Weight g 27

Sensor with cable and M8 connector

Weight g 15



Ordering code

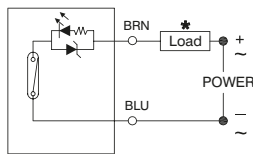
► Ampulla Reed sensors, with led, Universal, N.O. (Normally open)

| Code | Description | X=point of commutation |
|----------|--|------------------------|
| 1580.U | (2 wires) cable 2.5 mt. | 15 mm |
| MRS.U | (2 wires) cable 300 mm, M8 connector (use MC1 or MC2 connectors) | 15 mm |
| 1580.UAP | PNP (3 wires) cable 2.5 mt. | 15 mm |
| MRS.UAP | PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors) | 15 mm |

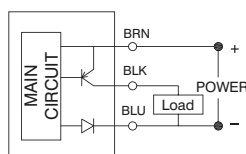
► Hall effect sensors, with led, DC, N.O. (Normally open)

| Code | Description | X=point of commutation |
|----------|--|------------------------|
| 1580.HAP | PNP (3 wires) cable 2.5 mt. | 8 mm |
| 1580.HAN | NPN (3 wires) cable 2.5 mt. | 8 mm |
| MHS.P | PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors) | 8 mm |

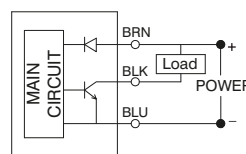
Diagrams and connections



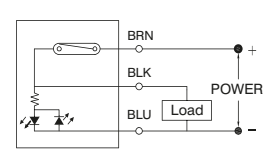
with Reed bulb (2 wires)



Hall-PNP effect (3 wires)



Hall-NPN effect (3 wires)



with Reed bulb (3 wires)

* 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 | 100mA | | | | | | |
| Maximum permanent power | 14 VA - 10 W | | 4 VA - 3 W | | 3 W | | |
| Voltage range | 5 - 230V DC/AC | | 5 - 30V DC/AC | | 10 - 30 V DC | | |
| Working temperature | -10°C - +70°C | | | | | | |
| Maximum voltage drop | 3.5 V | | 0V ** | | 2 V | | |
| Cable section (mm ²) | 2 x 0.14 Ø3.3mm PUR | | 2 x 0.14 Ø3.3mm PUR | | 3 x 0.14 Ø3.3 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

- 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

- 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

Connection 2 wires

Connector



Sensor



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

Connection 3 wires

Connector

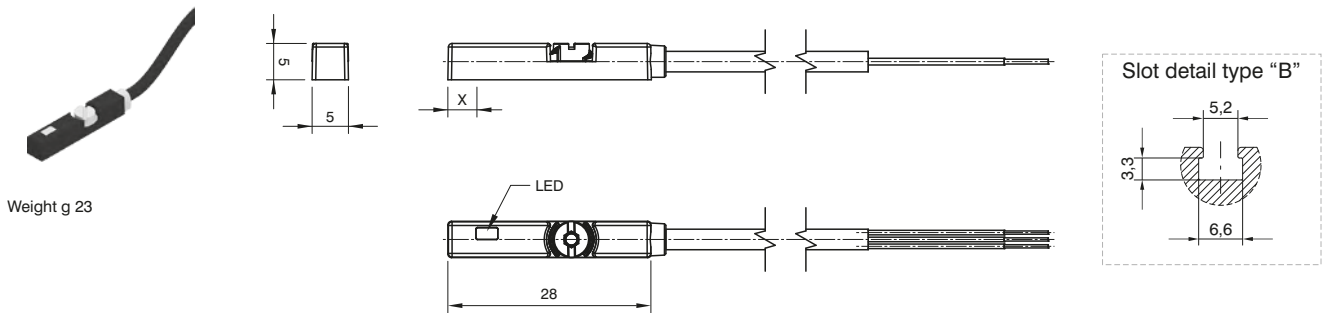


Sensor



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

► Sensor with 2.5 m. cable

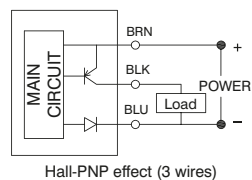


Weight g 23

Ordering code

| | | |
|---|-----------------------------|-------------------------|
| Hall effect sensors, with led, DC, N.O. (Normally open) | | X= point of commutation |
| 1595.HAP | PNP (3 wires) cable 2.5 mt. | 2.3 mm |

Diagrams and connections



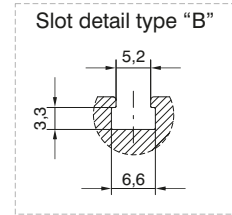
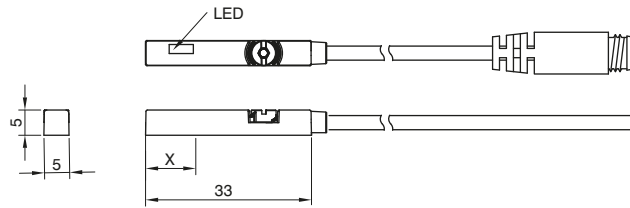
| Technical characteristics | 1595.HAP |
|----------------------------------|-------------------------|
| Type of contact | N.O. |
| Output type | PNP |
| Maximum current | 100 mA |
| Maximum permanent power | 3W |
| Voltage range | 10 - 28 VDC |
| Working temperature | -10 - +70°C |
| Maximum voltage drop | 1,5V |
| Cable section (mm ²) | 3 x 0,14 Ø2.8 mm PUR |
| Degree of protection | IP67 |



► Sensor with 2,5 m cable



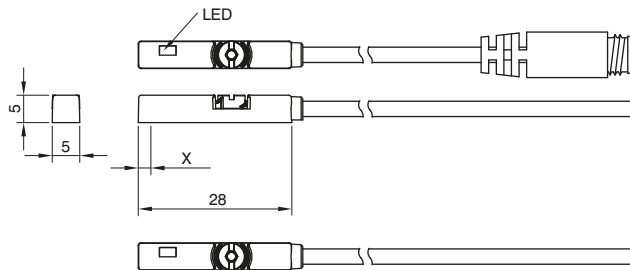
Weight g 27



Sensor with cable and M8 connector



Weight g 15



Ordering code

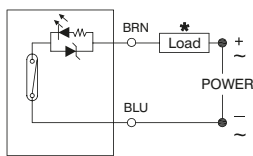
► Ampulla Reed sensors, with led, Universal, N.O. (Normally open)

| | | X=point of commutation |
|-----------------|--|------------------------|
| 1590.U | (2 wires) cable 2.5 mt. | 10 mm |
| LRS.U | (2 wires) cable 300 mm, M8 connector (use MC1 or MC2 connectors) | 10 mm |
| 1590.UAP | PNP (3 wires) cable 2.5 mt. | 10 mm |
| LRS.UAP | PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors) | 10 mm |

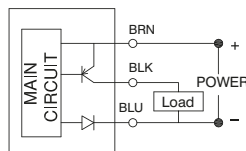
► Hall effect sensors, with led, DC, N.O. (Normally open)

| | | X=point of commutation |
|-----------------|--|------------------------|
| 1590.HAP | PNP (3 wires) cable 2.5 mt. | 2,3 mm |
| LHS.P | PNP (3 wires) cable 300 mm, M8 connector (use MCH1 or MCH2 connectors) | 2,3 mm |

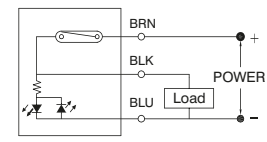
Diagrams and connections



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 ²) | 2 x 0.14 Ø3 mm PUR | | | | 3 x 0.14 Ø3 mm PUR | |
| Degree of protection | IP 67 | | | | | |

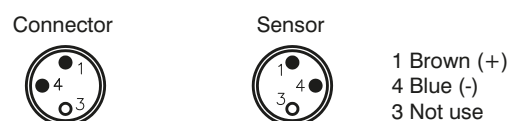
** Even if one sensor generates a voltage drop very close to 0 Volts, we suggest to connect no more than 30 sensors in series.

Cable ordering code

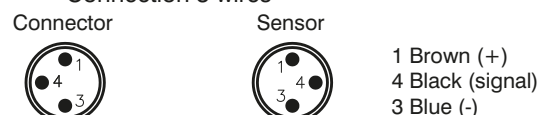
- MC1** cable 2 wires l=2.5m with M8 connector
- MC2** cable 2 wires l=5m with M8 connector
- MC3** cable 2 wires l=10m with M8 connector

- 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

Connection 2 wires



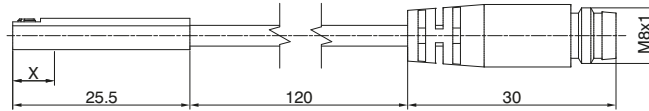
Connection 3 wires



Sensor with 2.5 m. cable



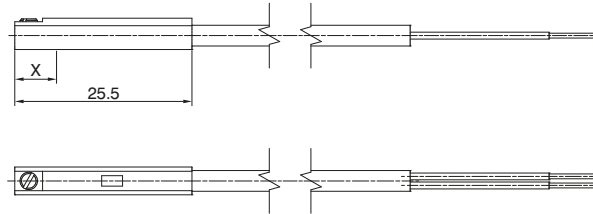
Weight g 22



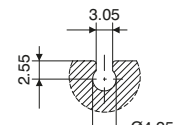
Sensor with cable and M8 connector



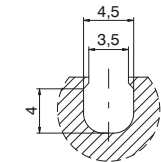
Weight g 10



Slot detail type "C"



Slot detail type "D"



Ordering code

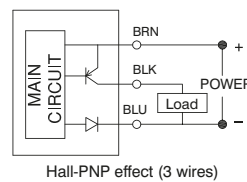
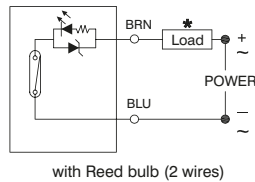
Ampulla Reed sensors, with led, Universal, N.O. (Normally open)

| Ordering code | Description | X=point of commutation |
|---------------|--|------------------------|
| 1581.U | (2 wires) cable 2.5 mt. | 10 mm |
| TRS.U | (2 wires) cable 100 mm, M8 connector (use MC1 or MC2 connectors) | 10 mm |

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

| Ordering code | Description | X=point of commutation |
|---------------|--|------------------------|
| 1581.HAP | PNP (3 wires) cable 2.5 mt. | 7,5 mm |
| THS.P | PNP (3 wires) cable 100 mm, M8 connector (use MCH1 or MCH2 connectors) | 7,5 mm |

Diagrams and connections



* 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 ²) | 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

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 cable

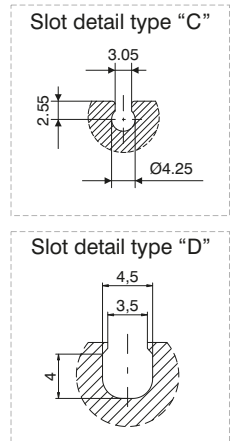
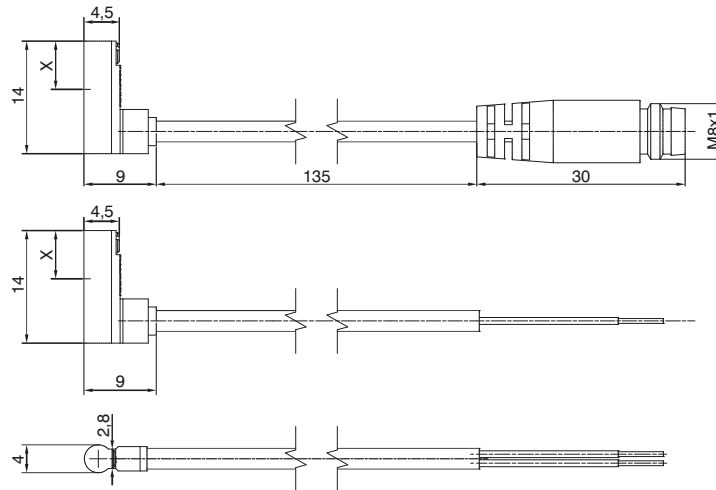


Weight g 22

► Sensor with cable and M8 connector



Weight g 10



Ordering code

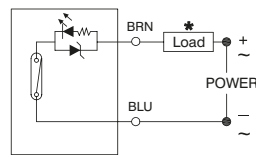
► Ampulla Reed sensors, with led, DC, N.O. (Normally open)

| | | |
|---------|-----------------------|------------------------|
| | | X=point of commutation |
| 1583.DC | (2 wires) cable 2 mt. | 6 mm |

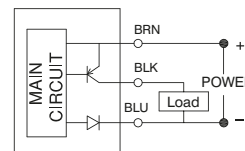
► Hall effect sensors, with led, N.O. (Normally open)

| | | |
|----------|--|------------------------|
| | | X=point of commutation |
| 1583.HAP | PNP (3 wires) cable 3 mt. | 6 mm |
| THR.P | PNP (3 wires) cable 100 mm, M8 connector (use MCH1 or MCH2 connectors) | 6 mm |

Diagrams and connections



with Reed bulb (2 wires)



Hall-PNP effect (3 wires)

* 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

- 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 | Microbore with threaded end covers and "TECNO-MIR" microbore "MIR" with rolled end covers Microbore "MIR-INOX" with rolled end covers for cylinders Ø32 - Ø40 | with clamps code 1260.Ø.FS with clamps code 1280.Ø.FS with clamps code 1280.Ø.FSX with brackets code 1320.AS |
| 1319 - 1320 1325 - 1345 1330 - 1332 1348 - 1349 | for cylinders Ø50 ÷ Ø63 | with brackets code 1320.BS |
| | for cylinders Ø80 ÷ Ø100 | with brackets code 1320.CS |
| | for cylinders Ø125 | with brackets code 1320.DSC |
| | for cylinders Ø160 | with brackets code 1320.ESC |
| | for cylinders Ø200 | with brackets code 1320.FSC |
| 1386-87 / 1396-97 | Cylinders according to standard ISO 15552 ECOPLUS | directly on groove |
| | Cylinders according to standard ISO 15552 ECOLIGHT | |
| 1390 - 1391 | Warning: 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 |
| | Short stroke compact cylinders | with adapter code 1380.01F |
| 1500 | 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) | |
| 6101 | Heavy duty guided shortstroke cylinder | |
| 6200 | Twin rod slides units | |
| 6210 | Twin through rod slides units | |
| 6301 | Pneumatic grippers, angular standard version | |
| 6303 | 180° angular gripper rack & pinion style | |
| 6310 | Parallel style pneumatic grippers standard version (Ø10 - Ø25) | |
| 6311 | Parallel style pneumatic grippers wide opening | |
| 6312 | 3 finger parallel style pneumatic grippers (Ø32 - Ø125) | directly on groove |



Square section version (for sensor slot type "B")

| SERIES | DESCRIPTION | MOUNTED |
|--|---|---|
| 1200 | Microbore with threaded end covers and "TECNO-MIR" microbore "MIR" with rolled end covers Microbore "MIR-INOX" with rolled end covers for cylinders Ø32 - Ø40 | with clamps code 1260.Ø.FS with clamps code 1280.Ø.FS with clamps code 1280.Ø.FSX with brackets code 1320.ASC |
| 1319 - 1320 1325 - 1345 1330 - 1332 1348 - 1349 | for cylinders Ø50 - Ø63 | with brackets code 1320.BSC |
| | for cylinders Ø80 - Ø100 | with brackets code 1320.CSC |
| | for cylinders Ø125 | with brackets code 1320.DSC |
| | for cylinders Ø160 | with brackets code 1320.ESC |
| | for cylinders Ø200 | with brackets code 1320.FSC |
| 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 from Ø32 to Ø50: directly on groove |
| | Compact cylinder according to standard ISO 21287 ECOMPACT | directly on groove |
| 6100 | Guided compact cylinder (Ø20 - Ø63) | |
| 6101 | Heavy duty guided shortstroke cylinder | |
| 6200 | Twin rod slides units | |
| 6210 | Twin through rod slides units | |
| 6301 | Pneumatic grippers, angular standard version | |
| 6303 | 180° angular gripper rack & pinion style | |
| 6310 | Parallel style pneumatic grippers standard version (Ø10 - Ø25) | |
| 6311 | Parallel style pneumatic grippers wide opening | |
| 6312 | 3 finger parallel style pneumatic grippers (Ø32 - Ø125) | directly on groove |
| 6411 | Single rack rotary actuators | |



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

| SERIES | DESCRIPTION | MOUNTED |
|--------|--|--------------------|
| 6100 | Guided compact cylinder (Ø12 - Ø16) | |
| 6302 | Pneumatic grippers, 180° angular | |
| 6310 | Parallel style pneumatic grippers standard version (Ø16 and Ø25) | |
| 6312 | 3 finger parallel style pneumatic grippers (Ø16 - Ø25) | |
| 6400 | Double rack rotary actuators with turn table | directly on groove |
| 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 |

