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Switches



Magnetic/Inductive Proximity Sensors

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Magnetic/Inductive Proximity Sensors and Cables 3-18

Global Reed Switch	3
Global Hall PNP	4
Global Hall NPN	5
Global Switch Mounting	6-8
LP Series Switch	9
CS Series Switch	10-11
Female Connectors for Reed Switches and Sensors	11
4mm Proximity Switch	12
5mm Proximity Switch	13
6.5mm Proximity Switch	14
8mm Proximity Switch	15
Switch Application Chart Section for Product Sensor and Bracket Part Numbers	16-18

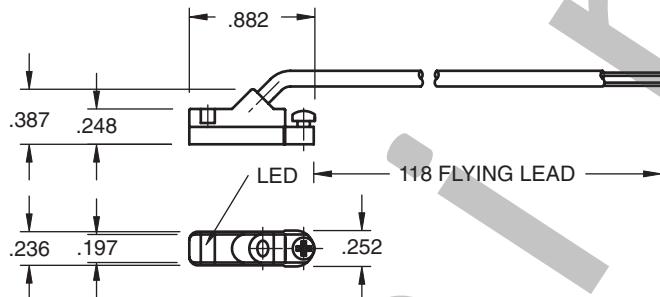


Magnetic/Inductive Proximity Sensors & Cables



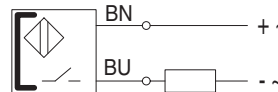
Numatics Actuator Group now offers the **Global** switch for the M Series. The **Global** switch is available in Reed and both PNP and NPN electronic types. All types are available with either a 3m (118") flying lead or 8mm DIN nano cable. The electronic switches feature magnetoresistive-sensing technology. Another advantage the **Global** electronic switches possess is reverse polarity protection to prevent damage from miswiring the sensors.

Reed Switch (AC/DC NO), flying lead - RSS02



Sensing Data

Ambient temperature range T_a	(°F/°C)	-4 to 176 (-20 to 80)
Frequency of operating cycles f at U_e	(kHz)	0.5
Turn on time t	(ms)	≤ 0.25
Turn off time t	(ms)	0.03
LED function indication		yes



Electrical Data

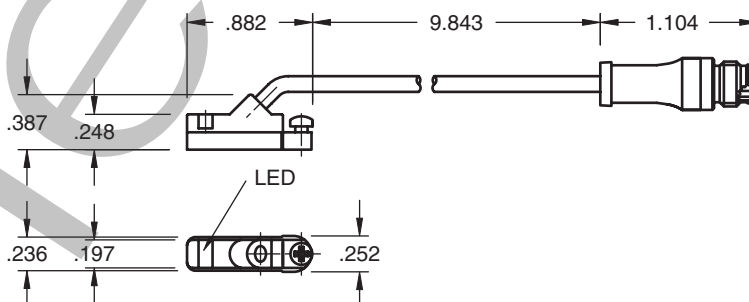
Rated operational voltage U_e	(V)	3...130 AC/DC
Supply voltage U_B	(V)	3...130 AC/DC
Voltage drop U_d at I_e Stat./dyn.	(V)	3.5
Rated insulation voltage U_i	(V)	2750 DC (EN 60335-1)
Rated supply frequency	(Hz)	AC/DC
Rated operational current I_e	(mA)	50 (10W max.)
No-load supply current I_0 at U_e d./und.	(mA)	0
Observe polarity for correct LED function		

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 50g, 11 ms	
Rated vibration environment: 10g, 10...2000 Hz, 90 min	

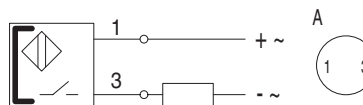


Reed Switch (AC/DC NO), 8mm connector - RSQ02



Sensing Data

Ambient temperature range T_a	(°F/°C)	-4 to 176 (-20 to 80)
Frequency of operating cycles f at U_e	(kHz)	0.5
Turn on time t	(ms)	≤ 0.25
Turn off time t	(ms)	0.03
LED function indication		yes



Electrical Data

Rated operational voltage U_e	(V)	3...130 AC/DC
Supply voltage U_B	(V)	3...130 AC/DC
Voltage drop U_d at I_e Stat./dyn.	(V)	3.5
Rated insulation voltage U_i	(V)	2750 DC (EN 60335-1)
Rated supply frequency	(Hz)	AC/DC
Rated operational current I_e	(mA)	50 (10W max.)
No-load supply current I_0 at U_e d./und.	(mA)	0
Observe polarity for correct LED function		

Mechanical Data

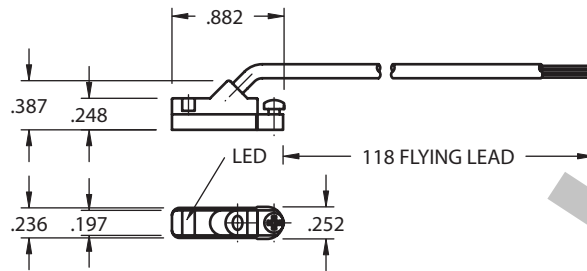
Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 50g, 11 ms	
Rated vibration environment: 10g, 10...2000 Hz, 90 min	





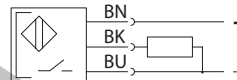
Magnetic/Inductive Proximity Sensors & Cables

Electronic Switch (PNP NO), flying lead - HPNPS31



Sensing Data

Ambient temperature range Δ	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of)	$\leq 0.3\%/^{\circ}\text{C}$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
turn off time t	(ms)	.05
Utilization categories		DC13
Function-/supply voltage indication		YES



Electrical Data

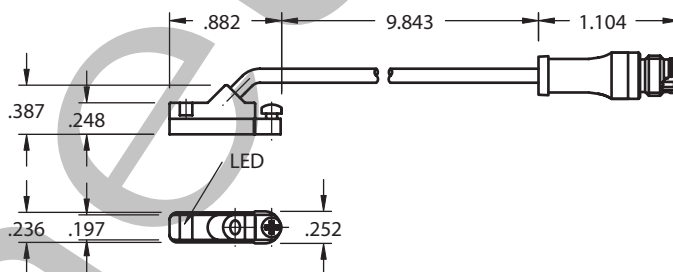
Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation volatage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

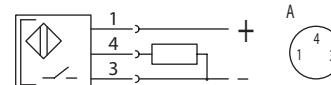


Electronic Switch (PNP NO), 8mm connector - HPNPQ31



Sensing Data

Ambient temperature range Δ	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of S_r)	$\leq 0.3\%/^{\circ}\text{C}$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
turn off time t	(ms)	.05
Utilization categories		DC13
Function-/supply voltage indication		YES



Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation volatage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

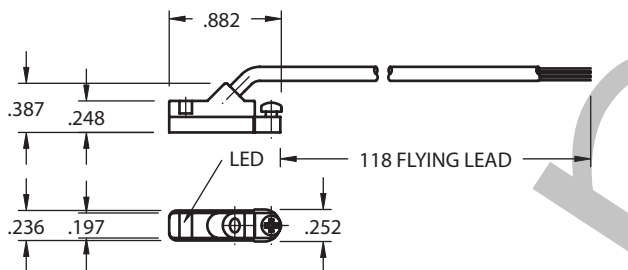




Magnetic/Inductive Proximity Sensors & Cables

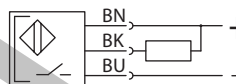


Electronic Switch (NPN NO), flying lead - HNPNS32



Sensing Data

Ambient temperature range ϑ_d	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of S_T)	$\leq 0.3\%/^{\circ}C$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
turn off time t	(ms)	.05
Utilization categories		DC13
Function–supply voltage indication		YES



Electrical Data

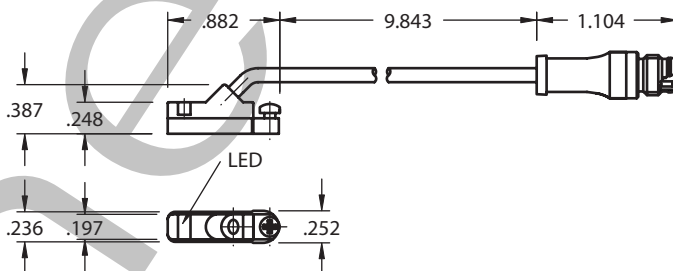
Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation voltage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

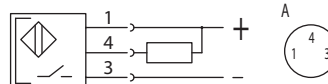


Electronic Switch (NPN NO), 8mm connector - HNPNQ32



Sensing Data

Ambient temperature range ϑ_d	(°F/°C)	-13 to +158 (-25 to +70)
Temperature drift	(% of S_T)	$\leq 0.3\%/^{\circ}C$
Frequency of operating cycles f at U_e	(kHz)	10
Turn on time t	(ms)	.05
turn off time t	(ms)	.05
Utilization categories		DC13
Function–supply voltage indication		YES



Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
incl. ripple	(% of U_e)	15
Voltage drop U_d at I_e Stat./dyn.	(V)	1/-
Rated insulation voltage U_i	(V)	75 AC
Rated supply frequency	(Hz)	DC
Rated operational current I_e	(mA)	200
No-load supply current I_o at U_e d./und.	(mA)	25/13
Protected against polarity reversal		YES

Mechanical Data

Housing material	Polyamide
Material of sensing face	Polyamide
Connection	PVC cable
Degree of Protection	IP 67
Rated shock: half-sinus, 30 g, 11 ms	
Rated vibration environment: 55 Hz, 1mm amplitude, 3 x 30	

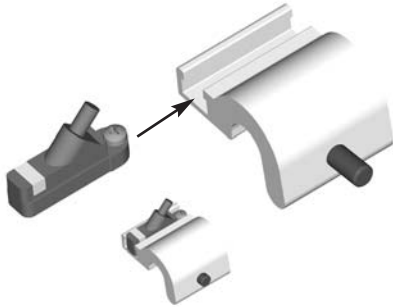




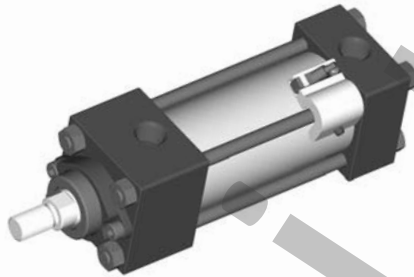
Magnetic/Inductive Proximity Sensors & Cables

Global Switch Mounting Tie Rod Cylinders

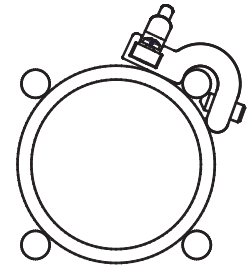
1. Loosen Phillips head screw and insert into bracket.



2. Attach bracket to tie rod.

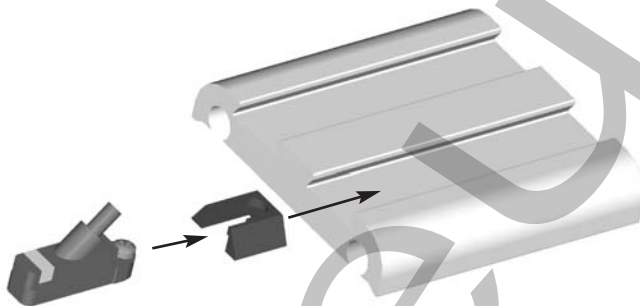


3. Bracket should be turned so that the switch is as close to the tube as possible.

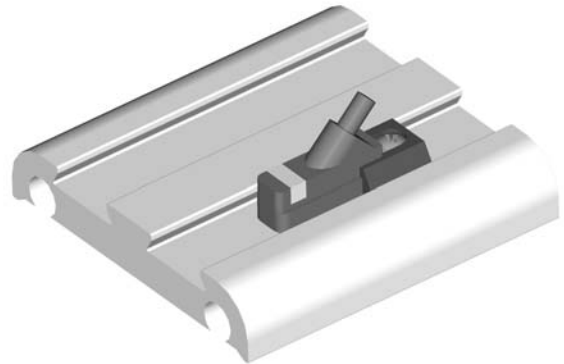


Profile Tube Type Cylinders

1. Loosen Phillips head screw, insert adaptor (included) into dovetail groove, and then slide switch into adaptor.

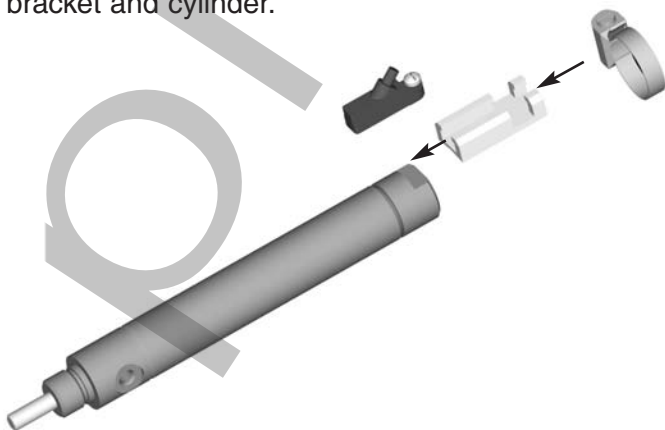


2. Tighten screw to wedge adaptor to profile.

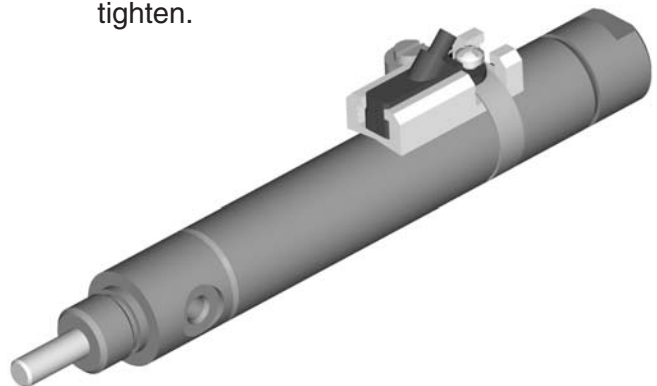


M Series Cylinders with Switch Bracket (Short Bracket Shown)

1. Loosen band clamp and slide over both the bracket and cylinder.



2. Tighten band clamp, loosen Phillips head screw, insert switch into bracket, and then tighten.





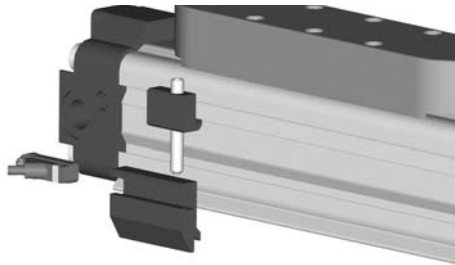
Magnetic/Inductive Proximity Sensors & Cables



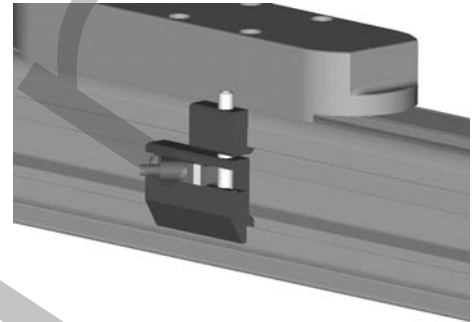
Global Switch Mounting continued

S1 and G1 Rodless Cylinders

1. Insert bracket pieces (1) and (2) into cylinder extrusion. Tighten set screw to lock pieces together. Insert switch into slot.

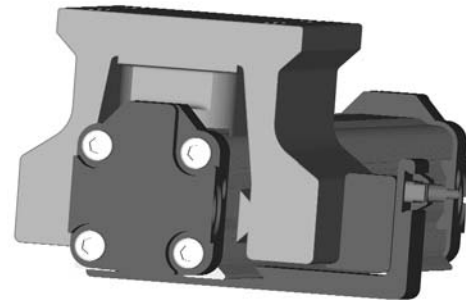
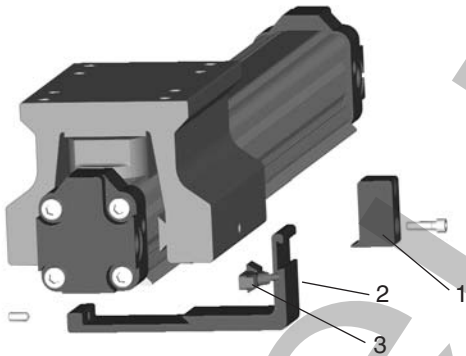


2. Insert switch into slot. Tighten Phillips head screw to lock switch into place.



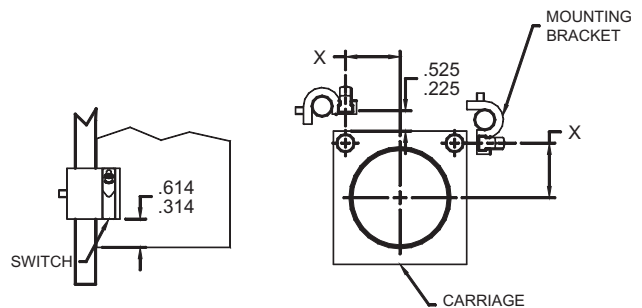
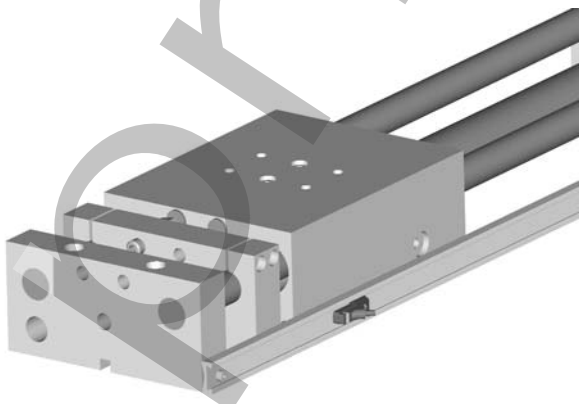
S5 Rodless Cylinders

Install magnet bracket (1) to carriage using provided socket head cap screw. Attach switch bracket (2) to underside of cylinder extrusion and lock into place with set screw. Insert switch dovetail adaptor (3) in bracket groove. Insert switch into adaptor and lock into place with the switches Phillips head screw.



MCR Rodless Cylinders

Since the MCR non-guided carriage can rotate freely 360°, a 1/4" diameter rod (supplied by Numatics or the customer) is required to mount the switch bracket as shown in the diagram. This rod is mounted per each individual customer application with the restriction that the switch placement falls within the dimensions specified below.



Sensing Dimensions mm(inches)

12 BORE	16 BORE	20 BORE	25 BORE	32 BORE	40 BORE
5.4 (0.21) to 15.5 (0.61)	8.4 (0.33) to 18.5 (0.73)	11.4 (0.45) to 21.6 (0.85)	15.4 (0.61) to 25.6 (1.01)	20.1 (0.79) to 30.3 (1.19)	27.5 (1.08) to 31.9 (1.28)

MC3, MC4, MC5 utilize a switch rail that is mounted to the end plates and runs the length of the cylinder. The switch is installed using the included dovetail adaptor.

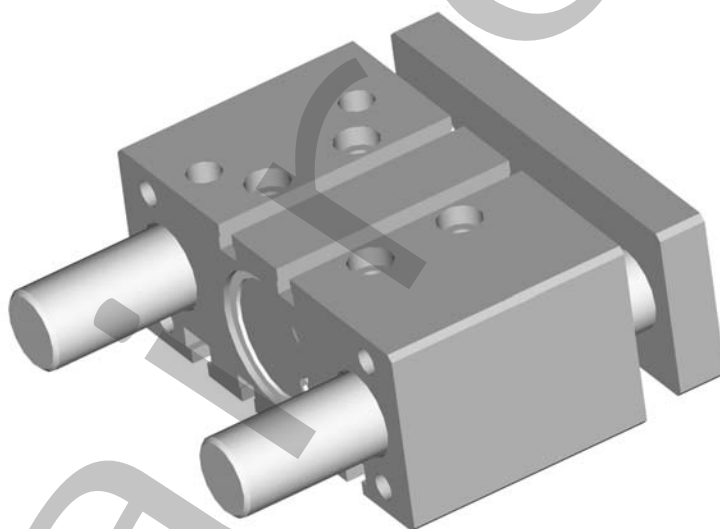


NOTES

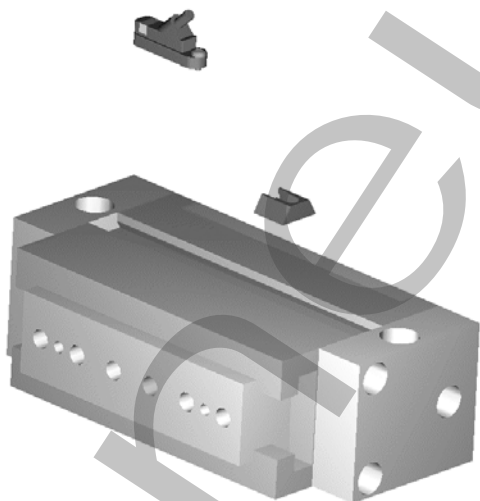
Global Switch Mounting continued

Motion Control Products

The Global switch is directly inserted into the T-Slot on the following Motion Control products: CGT and CGS slides, E Series grippers, and the SC Series swing clamp. The switch is locked into place with the Phillips head screw.



The following Motion Control products use the Global switch: B Series slides, AR and RW Series rotary actuators, and AG and NRG Series grippers. Insert adaptor into the dovetail groove, and then slide switch into adaptor. Tighten the Phillips head screw to lock switch into place.

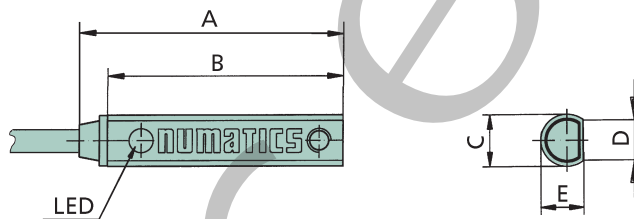




Magnetic/Inductive Proximity Sensors & Cables



LP Series for Cylinders of Profile Type
K Series, ISO 6341/VDMA 24562, RL Lock



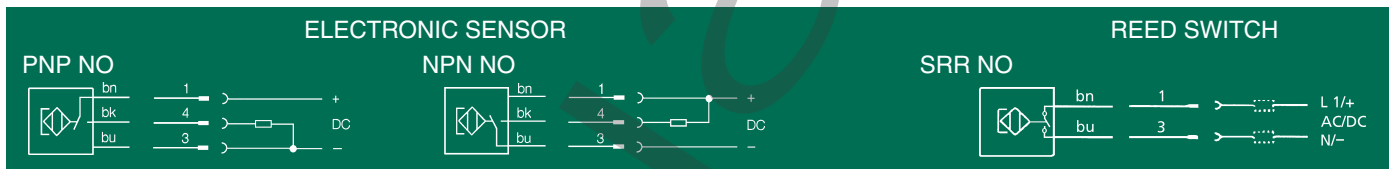
Electronic Sensor

(3 WIRE TYPE) (mm)		A	B	C	D	E	ORDER CODE
27 cm cable made from PVC with M8x1 mm plug	(PNP NO)						SPR-C02
2 m cable made from PVC, 3x0.14 mm ²	(PNP NO)	33.0	29.5	6.5	5.0	5.3	SPR-W20
27 cm cable made from PVC with M8x1 mm plug	(NPN NO)						SNR-C02
2 m cable made from PVC, 3x0.14 mm ²	(NPN NO)						SNR-W20

Reed Switch

(2 WIRE TYPE) (mm)		A	B	C	D	E	ORDER CODE
27 cm cable made from PVC with M8x1 mm plug	(SRR NO)	33.0	29.5	6.5	5.0	5.3	SRR-C02
2 m cable made from PVC, 3x0.14 mm ²	(SRR NO)						SRR-W20

Technical Data



	ELECTRONIC SENSOR	REED SWITCH
Operating Voltage U_B	10-30 V DC	27 cm cable with M8 x 1 mm plug: 10-50 V AC/60VDC 2 m cable: 10-120 V AC/DC
Residual Ripple	$\leq 10\% U_B$	
Voltage Decrease U_d (with I_a max.)	≤ 2 V	≤ 3 V
Current Absorption (not activated)	≤ 10 mA	
Switching Current I_a	< 150 mA	< 100 mA
Response Sensitivity	approx. 3 mT	approx. 3 mT
EMV to:	EN 60947-5-2	EN 60947-5-2
Wire Breakage Protection	Yes	—
Short Circuit Protection	Yes	—
Reverse Polarity Protection	Yes	Yes
Power-Up Pulse Suppression	Yes	—
Protection to DIN 40050	IP67	IP67
Shock and Vibration Resistance	30 g, 11 ms, 10 to 55 Hz, 1mm	30 g, 11 ms, 10 to 55 Hz, 1mm
Ambient Temperature T_a	-10°F to 165°F (-25°C to +75°C)	-10°F to 165°F (-25°C to +75°C)

- Attention:
- With CD-operation LED only illuminates when switch is correctly polarized.
 - Never operate sensor W/O load.
 - When switching higher capacitive and inductive loads, protection measures are to be taken

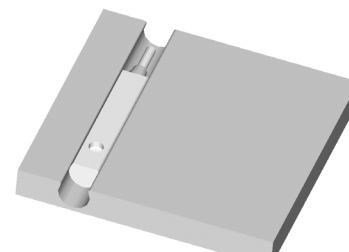
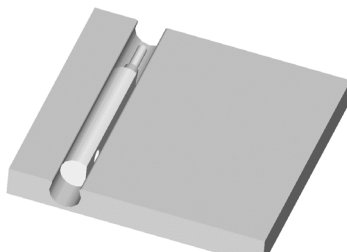
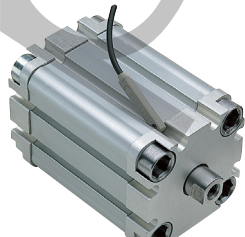
Sensors

Mounting of Switches with LP Profile

1. Put sensor in the cylinder groove at any point.

2. Rotate it by 90°.

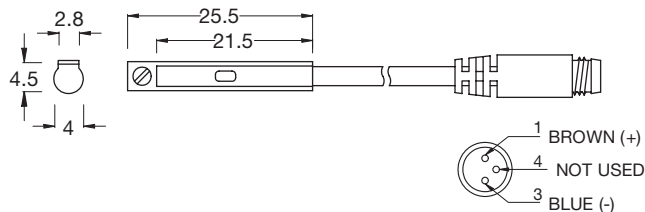
3. Tighten screw M3 (key 1.5 mm is included).





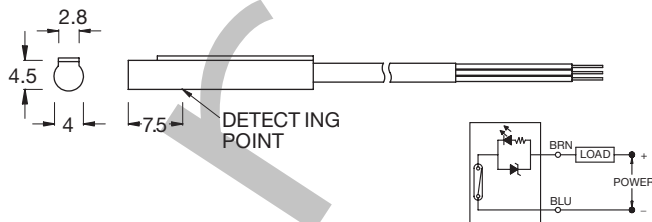
Magnetic/Inductive Proximity Sensors & Cables

**Reed Switch (AC/DC NO)
8 mm Connector - CS20TR-QD**



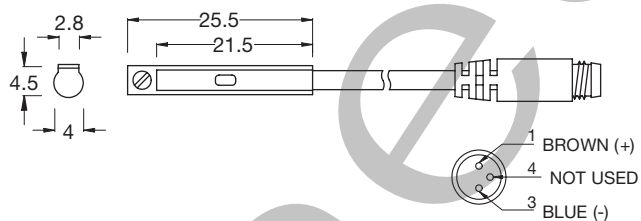
Sensor Type	Reed Switch
Switching Logic	SPST Normally Open
Output	-
Operating Voltage	5-120V DC/AC 50/60 Hz
Switching Current	50mA max. (Resistive)
Power Rating*	6 Watts
Voltage Drop	2.5V
Current Consumption	-
Leakage Current	-
LED Indicator	Red
Operating Frequency	200 Hz
Temperature Range	-
Shock / Vibration	30G/9G
Protection Circuit	None
Set Screw Max. Torque	-

**Reed Switch (AC/DC NO)
Flying Lead - CS20TR**



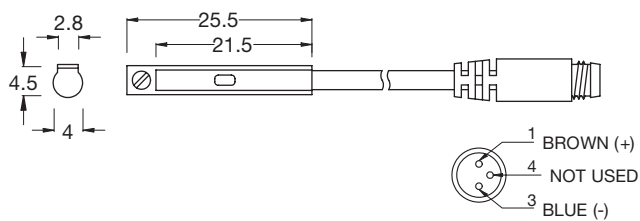
Sensor Type	Reed Switch
Switching Logic	SPST Normally Open
Output	-
Operating Voltage	5-120V DC/AC 50/60 Hz
Switching Current	50mA max. (Resistive)
Power Rating*	6 Watts
Voltage Drop	2.5 max.
Current Consumption	-
Leakage Current	-
LED Indicator	Red
Operating Frequency	200 Hz
Temperature Range	-
Shock / Vibration	30G/9G
Protection Circuit	None
Set Screw Max. Torque	-

**Electro Switch (PNP NO)
8 mm Connector - CS-20TP-QD**



Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	PNP Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	1.5 V @ 25 mA max.
Current Consumption	15 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Green
Cable	-
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

**Electro Switch (NPN NO)
8 mm Connector - CS-20TN-QD**



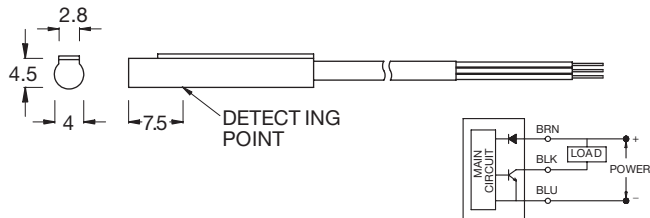
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	-
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)



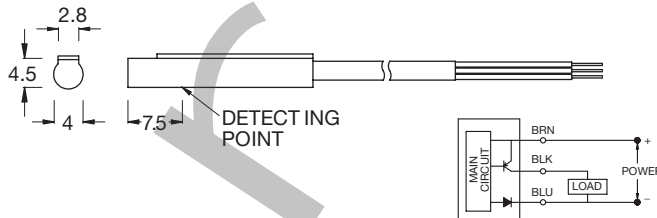
Magnetic/Inductive Proximity Sensors & Cables



Electro Switch (NPN NO)
Flying Lead - CS-20TN



Electro Switch (PNP NO)
Flying Lead - CS-20TP

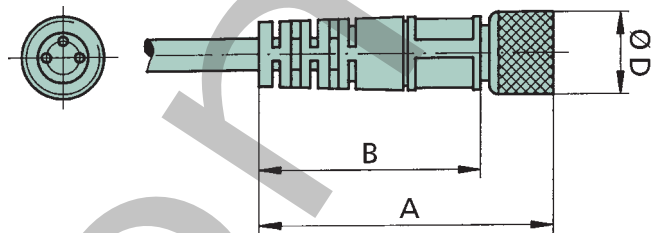


Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	-
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

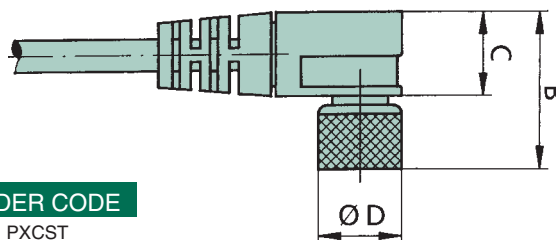
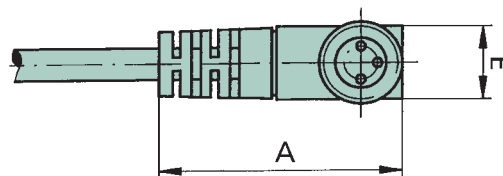
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	PNP Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	1.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Green
Cable	Abrasion resistant polyurethane (PUR) jacket, PVC insulation
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

Female Connectors for Reed Switches and Sensors

Straight Type

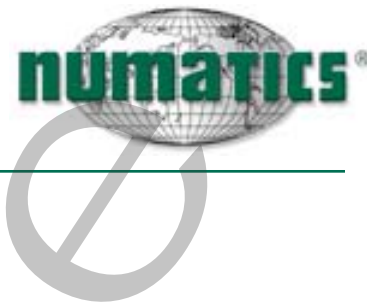


Elbow Type



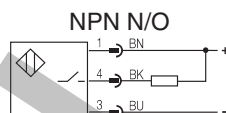
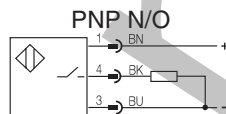
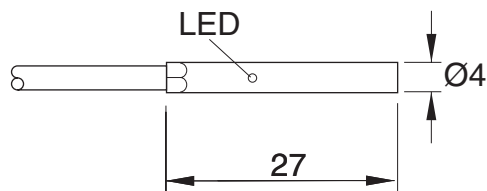
Dimensions (mm)

TYPE	A	B	C	D	E	ORDER CODE
Straight, 5 m Cable (3 x 0.25 mm ²)	32.3	24.4	-	9	-	PXCST
Elbow, 5 m Cable (3 x 0.25 mm ²)	26.3	17.1	9.2	9	8	PXC90



Magnetic/Inductive Proximity Sensors & Cables

Prox Switch (NPN NO) Flying Lead - PX04NS
(PNP NO) Flying Lead - PX04PS



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1800
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

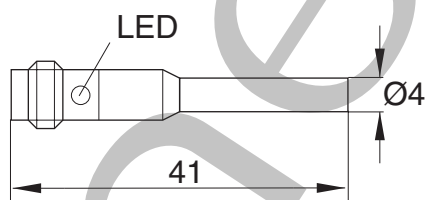
Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤3.0
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	100
Current consumption	(mA)	≤10 / ≤3
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤1.00

Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	cabl
No. of wires x gauge	3 x 26 AWG

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	cabl
No. of wires x gauge	3 x 26 AWG

Prox Switch (NPN NO), 8 mm connector - PX04NQ
(PNP NO), 8 mm connector - PX04PQ



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	500
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤1.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	100
Current consumption	(mA)	≤12 / ≤5
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤0.02

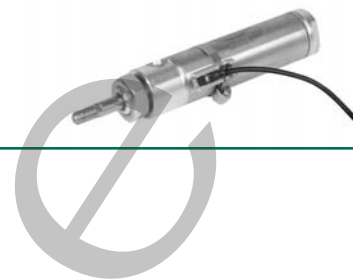
Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	connector
Recommended connector	PXCST Straight cable PXC90 90 degree cable

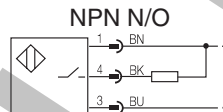
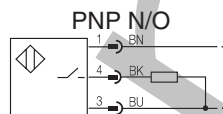
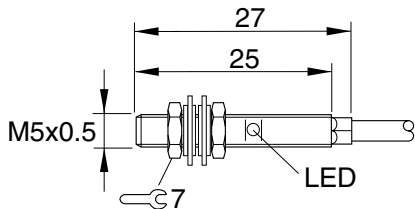
Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	connector
Recommended connector	PXCST Straight cable PXC90 90 degree cable



Magnetic/Inductive Proximity Sensors & Cables



Prox Switch (NPN NO) Flying Lead - PX05NS
(PNP NO) Flying Lead - PX05PS



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	500
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

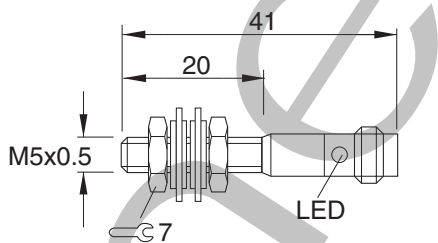
Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤1.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	150
Current consumption	(mA)	≤12 / ≤5
Off-State Current I_r	(µA)	≤50
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤0.10

Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	3 x 26 AWG
No. of wires x gauge	

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	3 x 26 AWG
No. of wires x gauge	

Prox Switch (NPN NO) 8 mm connector - PX05NQ
(PNP NO) 8 mm connector - PX05PQ



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1000
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤1.0
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	150
Current consumption	(mA)	≤10 / ≤1.5
Off-State Current I_r	(µA)	≤50
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤0.10

Mechanical Data

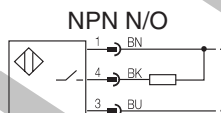
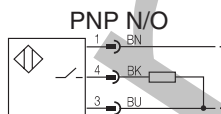
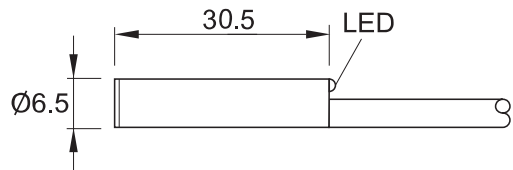
Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	connector
Recommended connector	C49 ANE-00-VY-050M

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	connector
Recommended connector	C49 ANE-00-VY-050M



Magnetic/Inductive Proximity Sensors & Cables

Prox Switch (NPN NO) Flying Leads - PX65NS
(PNP NO) Flying Leads - PX65PS



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1000
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤2.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	200
Current consumption	(mA)	≤25 / ≤12
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤1.00

Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	PA 12
Connection	cable
No. of wires x gauge	3 x 26 AWG
Approvals	cULus

IP 67
stainless steel
PA 12
cable
3 x 26 AWG
cULus

Prox Switch (NPN NO) 8 mm connector - PX65NQ
(PNP NO) 8 mm connector - PX65PQ



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1000
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤2.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	200
Current consumption	(mA)	≤25 / ≤12
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤1.00

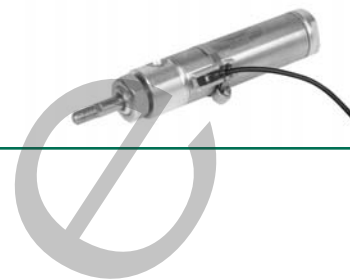
Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	PA 12
Connection	connector
Approval	cULus
Recommended connector	PXCST Straight cable PXC90 90 degree cable

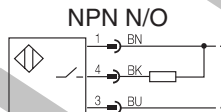
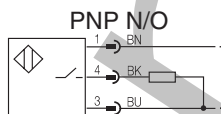
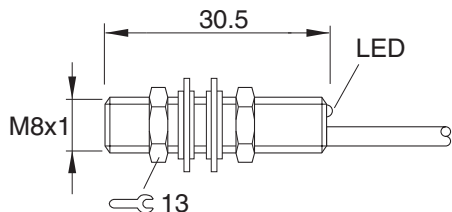
IP 67
stainless steel
PA 12
connector
cULus
PXCST Straight cable
PXC90 90 degree cable



Magnetic/Inductive Proximity Sensors & Cables



Prox Switch (NPN NO) Flying Leads - PX08NS
(PNP NO) Flying Leads - PX08PS



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1000
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

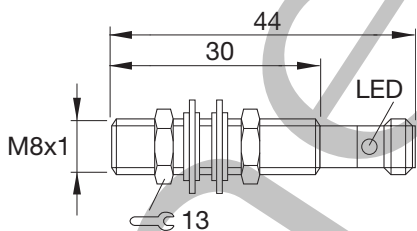
Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤2.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	200
Current consumption	(mA)	≤25 / ≤12
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤1.00

Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	PBTP
Connection	cable
No. of wires x gauge	3 x 26 AWG
Approvals	cULus

IP 67
stainless steel
PBTP
cable
3 x 26 AWG
cULus

Prox Switch (NPN NO) 8 mm connector - PX08NQ
(PNP NO) 8 mm connector - PX08PQ



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1000
Utilization categories	(DC)	13
Function indication		YES

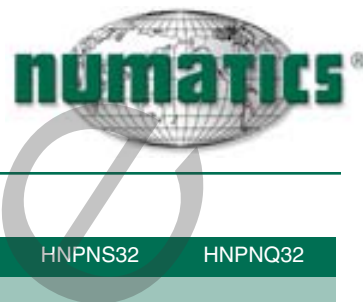
Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤2.5
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	200
Current consumption	(mA)	≤25 / ≤12
Off-State Current I_r	(µA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(µF)	≤1.00

Mechanical Data

Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	PBTP
Connection	connector
Approvals	cULus
Recommended connector	PXCST Straight cable PXC90 90 degree cable

IP 67
stainless steel
PBTP
connector
cULus
PXCST Straight cable
PXC90 90 degree cable



Magnetic/Inductive Proximity Sensors & Cables

Global Switch Application Chart Indicating Mounting Kit Part Numbers

PRODUCT		RSS02	RSQ02	HPNPS31	HPNPQ31	HNPNS32	HNPNQ32
Cylinders							
A, EQ & S Series Tie Rod	1-1/2" to 2-1/2" Bore	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017
A, EQ, F & S Series Tie Rod	3-1/4" to 4" Bore	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018
A, EQ & S Series Tie Rod	5" to 8" Bore	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019
A Series Profile	1-1/2 to 3-1/4" Bore	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
B Series	9/16" to 2-1/2" Bore	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
B Series	3" to 4" Bore	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019
B Square Series	3/4" to 2" Bore	N/A	N/A	N/A	N/A	N/A	N/A
B Square Series	2-1/2 to 3" Bore	N/A	N/A	N199-1017	N199-1017	N199-1017	N199-1017
B Square Series	4" Bore	N/A	N/A	N199-1018	N199-1018	N199-1018	N199-1018
C Series Profile	3/4" tp 2-1/2" Bore	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
C Series Tie Rod	3" Bore	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017
C Series Tie Rod	4" Bore	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018
K Series		N/A	N/A	N/A	N/A	N/A	N/A
M Series Short Bracket Kit (< 1" stroke)	9/16" Bore	N199-1003	N199-1003	N199-1003	N199-1003	N199-1003	N199-1003
M Series Long Bracket Kit (> 1" stroke)	9/16" Bore	N199-1010	N199-1010	N199-1010	N199-1010	N199-1010	N199-1010
M Series Short Bracket Kit (< 1" stroke)	3/4" Bore	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004
M Series Long Bracket Kit (> 1" stroke)	3/4" Bore	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011
M Series Short Bracket Kit (< 1" stroke)	7/8" to 1-1/4" Bore	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005
M Series Long Bracket Kit (> 1" stroke)	7/8" to 1-1/4" Bore	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012
M Series Short Bracket Kit (< 1" stroke)	1-1/2" Bore	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006
M Series Long Bracket Kit (> 1" stroke)	1-1/2" Bore	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013
M Series Short Bracket Kit (< 1" stroke)	1-3/4" to 2" Bore	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007
M Series Long Bracket Kit (> 1" stroke)	1-3/4" to 2" Bore	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014
M Series Short Bracket Kit (< 1" stroke)	2-1/2" Bore	N199-1008	N199-1008	N199-1008	N199-1008	N199-1008	N199-1008
M Series Long Bracket Kit (> 1" stroke)	2-1/2" Bore	N199-1015	N199-1015	N199-1015	N199-1015	N199-1015	N199-1015
M Series Short Bracket Kit (< 1" stroke)	3" Bore	N199-1009	N199-1009	N199-1009	N199-1009	N199-1009	N199-1009
M Series Long Bracket Kit (> 1" stroke)	3" Bore	N199-1016	N199-1016	N199-1016	N199-1016	N199-1016	N199-1016
P Series Profile (Including O & Q Types)		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
R Series Rotary Profile		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
ISO/VDMA Tie Rod	32-63 mm Bore	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017	N199-1017
ISO/VDMA Tie Rod	80-100 mm Bore	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018	N199-1018
ISO/VDMA Tie Rod	125-200 mm Bore	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019	N199-1019
ISO/VDMA Profile		N/A	N/A	N/A	N/A	N/A	N/A
G1 & G2 Rodless	All Bore Sizes	US1RB	US1RB	US1RB	US1RB	US1RB	US1RB
NR Rodless S1	All Bore Sizes	US1RB	US1RB	US1RB	US1RB	US1RB	US1RB
S2, G3 & G4 Rodless	All Bore Sizes	TBA	TBA	TBA	TBA	TBA	TBA
NR Rodless S5	25 mm Bore	S5RB-25-**-***	S5RB-25-**-***	S5RB-25-**-***	S5RB-25-**-***	S5RB-25-**-***	S5RB-25-**-***
NR Rodless S5	32 mm Bore	S5RB-32-**-***	S5RB-32-**-***	S5RB-32-**-***	S5RB-32-**-***	S5RB-32-**-***	S5RB-32-**-***
NR Rodless S5	40 mm Bore	S5RB-40-**-***	S5RB-40-**-***	S5RB-40-**-***	S5RB-40-**-***	S5RB-40-**-***	S5RB-40-**-***
NR Rodless S5	50 mm Bore	S5RB-50-**-***	S5RB-50-**-***	S5RB-50-**-***	S5RB-50-**-***	S5RB-50-**-***	S5RB-50-**-***
NR Rodless V1	25 mm Bore	V1RB-25-**-***	V1RB-25-**-***	V1RB-25-**-***	V1RB-25-**-***	V1RB-25-**-***	V1RB-25-**-***
NR Rodless V1	32 mm Bore	V1RB-32-**-***	V1RB-32-**-***	V1RB-32-**-***	V1RB-32-**-***	V1RB-32-**-***	V1RB-32-**-***
NR Rodless V1	40 mm Bore	V1RB-40-**-***	V1RB-40-**-***	V1RB-40-**-***	V1RB-40-**-***	V1RB-40-**-***	V1RB-40-**-***
NR Rodless V1	50 mm Bore	V1RB-50-**-***	V1RB-50-**-***	V1RB-50-**-***	V1RB-50-**-***	V1RB-50-**-***	V1RB-50-**-***
NOTE: **Indicates number of switch brackets. ***Indicates number of magnet holders.							
MC1 & MC2 Specify Length	All Bore Sizes	1/4-304-SSR* w/N199-1017	1/4-304-SSR* w/N199-1017	1/4-304-SSR* w/N199-1017	1/4-304-SSR* w/N199-1017	1/4-304-SSR* w/N199-1017	1/4-304-SSR* w/N199-1017
MC 3, MC4 & MC5 *Specify length, requires (2) 127-827 Screw.	All Bore Sizes	RM-001* direct w/included adaptor	RM-001* direct w/included adaptor	RM-001* direct w/included adaptor	RM-001* direct w/included adaptor	RM-001* direct w/included adaptor	RM-001* direct w/included adaptor

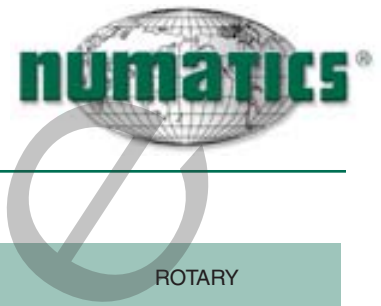


Magnetic/Inductive Proximity Sensors & Cables



Global Switch Application Chart Indicating Mounting Kit Part Numbers continued

PRODUCT		RSS02	RSQ02	HPNPS31	HPNPQ31	HNPNS32	HNPNQ32
Linear Slides							
SH Series Short Bracket Kit	5/16" Bore	N/A	N/A	N/A	N/A	N/A	N/A
SH Series Long Bracket Kit	5/16" Bore	N/A	N/A	N/A	N/A	N/A	N/A
Sh, LC Series Short Bracket	9/16" Bore	N199-1003	N199-1003	N199-1003	N199-1003	N199-1003	N199-1003
Sh, LC Series Long Bracket	9/16" Bore	N199-1010	N199-1010	N199-1010	N199-1010	N199-1010	N199-1010
Sh, LC, LCX Series Short Bracket	3/4" Bore	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004
Sh, LC, LCX Series Long Bracket	3/4" Bore	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011
Sh, LC, LCX Series Short Bracket	1-1/16" Bore	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005
Sh, LC, LCX Series Long Bracket	1-1/16" Bore	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012
Sh, LC, LCX Series Short Bracket	1-1/2" Bore	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006
Sh, LC, LCX Series Long Bracket	1-1/2" Bore	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013
SH Series Short Bracket Kit	2" Bore	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007
SH Series Long Bracket Kit	2" Bore	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014
SH Series Short Bracket Kit	2-1/2" Bore	N199-1008	N199-1008	N199-1008	N199-1008	N199-1008	N199-1008
SH Series Long Bracket Kit	2-1/2" Bore	N199-1015	N199-1015	N199-1015	N199-1015	N199-1015	N199-1015
SH Series Short Bracket Kit	3" Bore	N199-1009	N199-1009	N199-1009	N199-1009	N199-1009	N199-1009
SH Series Long Bracket Kit	3" Bore	N199-1016	N199-1016	N199-1016	N199-1016	N199-1016	N199-1016
B Series		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
CGT & CGS Series		direct	direct	direct	direct	direct	direct
PST Series		direct	direct	direct	direct	direct	direct
Gantry Slides							
GS Series Short Bracket Kit	3/4" Bore	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004	N199-1004
GS Series Long Bracket Kit	3/4" Bore	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011	N199-1011
GS Series Short Bracket Kit	1-1/16" Bore	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005	N199-1005
GS Series Long Bracket Kit	1-1/16" Bore	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012	N199-1012
GS Series Short Bracket Kit	1-1/2" Bore	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006	N199-1006
GS Series Long Bracket Kit	1-1/2" Bore	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013	N199-1013
GS Series Short Bracket Kit	2" Bore	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007	N199-1007
GS Series Long Bracket Kit	2" Bore	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014	N199-1014
Grippers							
NRG Series		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
AG Series		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
E Series		direct	direct	direct	direct	direct	direct
Rotary							
RW Series		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
AR Series		direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor	direct w/included adaptor
Swing Clamp							
SC Series		direct	direct	direct	direct	direct	direct
Belt and Screw Drive Unit							
BDU55, SDU55		SBBDU55 w/included adaptor	SBBDU55 w/included adaptor	SBBDU55 w/included adaptor	SBBDU55 w/included adaptor	SBBDU55 w/included adaptor	SBBDU55 w/included adaptor
BDU75, SDU75		SBBDU75 w/included adaptor	SBBDU75 w/included adaptor	SBBDU75 w/included adaptor	SBBDU75 w/included adaptor	SBBDU75 w/included adaptor	SBBDU75 w/included adaptor
BDU100, SDU100		SBBDU100 w/included adaptor	SBBDU100 w/included adaptor	SBBDU100 w/included adaptor	SBBDU100 w/included adaptor	SBBDU100 w/included adaptor	SBBDU100 w/included adaptor
G1 & G2 Rodless	All Bore Sizes	US1RB	US1RB	US1RB	US1RB	US1RB	US1RB
NR Rodless S1	All Bore Sizes	US1RB	US1RB	US1RB	US1RB	US1RB	US1RB



Magnetic/Inductive Proximity Sensors & Cables

Proximity Switch Application Chart Indicating Mounting Kit Part Numbers

PRODUCTS	LINEAR SLIDES	GANTRY SLIDES		GRIPPERS				ROTARY		
	PS SERIES ALL SIZES	PBS SERIES	RPG SERIES	WG SERIES	WGS50	WBG SERIES	PG6J80 SERIES	GR90 SERIES	LR SERIES	RM SERIES
PX04NS	N/A	N/A	CT500	CT500	WBG50SB	CT500	N/A	CT500	N/A	N/A
PX04PS	N/A	N/A	CT500	CT500	WBG50SB	CT500	N/A	CT500	N/A	N/A
PX04NQ	N/A	N/A	CT500	CT500	WBG50SB	CT500	N/A	CT500	N/A	N/A
PX04PQ	N/A	N/A	CT500	CT500	WBG50SB	CT500	N/A	CT500	N/A	N/A
PX05NS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RSH05	RSH05
PX05PS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RSH05	RSH05
PX05NQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RSH05	RSH05
PX05PQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RSH05	RSH05
PX65NS	PSSB	N/A	N/A	N/A	N/A	N/A	PG6JSB	N/A	N/A	N/A
PX65PS	PSSB	N/A	N/A	N/A	N/A	N/A	PG6JSB	N/A	N/A	N/A
PX65NQ	PSSB	N/A	N/A	N/A	N/A	N/A	PG6JSB	N/A	N/A	N/A
PX65PQ	PSSB	N/A	N/A	N/A	N/A	N/A	PG6JSB	N/A	N/A	N/A
PX08NS	N/A	direct	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PX08PS	N/A	direct	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PX08NQ	N/A	direct	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PX08PQ	N/A	direct	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

CS Switch Application Chart Indicating Mounting Kit Part Number

PRODUCT	CS-20TN	CS20TN-QD	CS-20TP	CS20TP-QD	CS-20TR	CS-20TR-QD
LINEAR SLIDES - SPS Series	direct	direct	direct	direct	direct	direct
GRIPPERS - PG Series	PGSB	PGSB	PGSB	PGSB	PGSB	PGSB
FEED ESCAPEMENT - FE Series	direct	direct	direct	direct	direct	direct

LP Series Switch Application Chart Indicating Available Usage

PRODUCT	SRR-C02	SRR-W20	SPR-C02	SPR-W20	SNR-C02	SNR-W20
Cylinders						
A, EQ, F and S Series Tie Rod (all)	N/A	N/A	N/A	N/A	N/A	N/A
A Series Profile (all)	N/A	N/A	N/A	N/A	N/A	N/A
B Series (all)	N/A	N/A	N/A	N/A	N/A	N/A
C Series (all)	N/A	N/A	N/A	N/A	N/A	N/A
K Series (all)	Yes	Yes	Yes	Yes	Yes	Yes
M Series (all)	N/A	N/A	N/A	N/A	N/A	N/A
P Series (including O and Q types)	N/A	N/A	N/A	N/A	N/A	N/A
R Series Rotary Profile	N/A	N/A	N/A	N/A	N/A	N/A
ISO/VDMA Tie Rod (all)	N/A	N/A	N/A	N/A	N/A	N/A
ISOVDMA Profile	Yes	Yes	Yes	Yes	Yes	Yes
RL Series Locking Units	Yes	Yes	Yes	Yes	Yes	Yes