

CATALOG

sensors

Actuator Sensors

Sensors and Sensor Brackets



numatics®

Numatics, Inc. is a leading manufacturer of pneumatic products and motion control products. Our broad spectrum of standard, custom developed products and application components, have made a significant impact on pneumatic innovation as well as pneumatic and motion control technology. Our company has an extensive history of generating innovative concepts and technological breakthroughs. Many of today's standard features in pneumatic technology were industry firsts from Numatics. We continue our innovative approach to product development by developing electric motion control solutions and enhancing our embedded Fieldbus and I/O products to continually meet and solve our customer's application requirements.



Today Numatics is proud to be a part of the Industrial Automation Division of Emerson Electric Co.

Emerson (NYSE: EMR) is a global company that brings together technology and engineering to provide innovative solutions for customers in a wide range of industrial, commercial, and consumer markets.

Numatics, along with the vast resources of the Emerson organization, will assure that our proud history of innovation and service will continue to meet the needs of our global customers.



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Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

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NFPA Interchangeable Cylinders

A, EQ, F, & S Series (Tie Rod)

BORE	BRACKET P/N
1 1/2"	N99-1181
2"	N99-1182
2 1/2"	N99-1182
3 1/4"	N99-1183
4"	N99-1183
5"	N99-1184
6"	N99-1184
8"	N99-1184
10"	N99-1191
12"	N99-1191
14"	N99-1200



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

A & F Series (Profile Tube)

BORE	BRACKET P/N
1 1/2"	N99-1185
2"	N99-1185
2 1/2"	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

Compact Cylinders

C Series (Profile Tube) 2 in magnet code

BORE	BRACKET P/N
3/4"	N99-1185
1 1/8"	N99-1185
1 1/2"	N99-1185
2"	N99-1185
2 1/2"	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

C Series (Profile Tube) 4 in magnet code

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	SH6-031	SH6-021
Hall NPN	SH6-032	SH6-022

See page 16 for sensor specifications

C Series (Tie Rod) 2 in magnet code

BORE	BRACKET P/N
3"	N99-1182
4"	N99-1183



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications



Compact Cylinders

C Series (Tie Rod) 4 in magnet code

BORE	BRACKET P/N
3"	SB6-L01
4"	SB6-P01



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	SH6-031	SH6-021
Hall NPN	SH6-032	SH6-022

See page 16 for sensor specifications

NB Series

BORE	BRACKET P/N
1/2"	SC-1
3/4"	SC-2
1 1/16"	SC-3
1 1/2"	SC-5
2"	SC-5
2 1/2"	SC-7
3"	SC-7
4"	SC-8



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	949-200-031	949-200-331
Hall NPN	949-200-032	949-200-332

See page 18 for sensor specifications

NB Square Series

BORE	BRACKET P/N
3/4"	900-F00-000
1 1/16"	900-F00-000
1 1/2"	900-F00-000
2"	900-F00-000
2 1/2"	900-G00-000
3"	900-G00-000
4"	900-H00-000

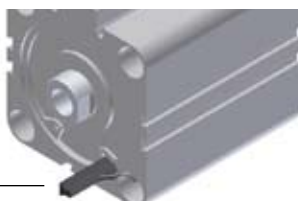


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	949-200-031	949-200-331
Hall NPN	949-200-032	949-200-332

See page 18 for sensor specifications

Universal Series

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	949-200-031	949-200-331
Hall NPN	949-200-032	949-200-332

See page 18 for sensor specifications



Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

Non-Repairable Cylinders

M Series

BORE	BRACKET P/N
9/16"	N199-1054
3/4"	N199-1055
7/8"	N199-1055
1 1/16"	N199-1056
1 1/4"	N199-1056
1 1/2"	N199-1057
1 3/4"	N199-1058
2"	N199-1058
2 1/2"	N199-1059
3"	N199-1060



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

ISO Standard Cylinders

ISO 15552



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

ISO VDMA (Tie Rod) Style

BORE	BRACKET P/N
32mm	N99-1181
40mm	N99-1182
50mm	N99-1183
63mm	N99-1183
80mm	N99-1183
100mm	N99-1183
125mm	N99-1184
160mm	N99-1184
200mm	N99-1191



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

ISO VDMA (Profile) Style



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications



Specialty Cylinders

E Series (Tie Rod)

BORE	BRACKET P/N
1 1/4"	N99-1181
1 3/4"	N99-1182
2"	N99-1181
2 1/2"	N99-1182
3"	N99-1182
3 1/2"	N99-1183
4 1/2"	N99-1184
5"	N99-1184
6"	N99-1184
8"	N99-1184



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

Tiny Titan Series (Profile)

BORE	BRACKET P/N
3/4"	N99-1185
1"	N99-1185
1 1/8"	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

Linear Slides

SH Series Slide

BORE	BRACKET P/N
SH056	N199-1054
SH075	N199-1055
SH106	N199-1056
SH150	N199-1057
SH200	N199-1058
SH250	N199-1059
SH300	N199-1060



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

B Series Slide

BORE	BRACKET P/N
B04	N99-1185
B06	N99-1185
B08	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications



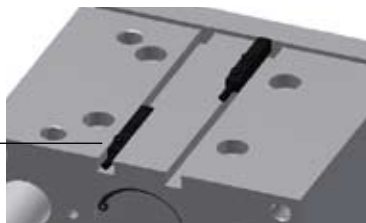
Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

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Linear Slides

CGT/CGS Series Slides

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00S	REED-QDS-M8S
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

PST Series Slide

PST08 30mm stroke or less,
Only available with single position sensing

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

GS Series Gantry

BORE	BRACKET P/N
GS075	N199-1055
GS106	N199-1056
GS150	N199-1057
GS200	N199-1058



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

PBS Series Gantry

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-8FL2-PN	PROX-8QDS-PN
Prox NPN	PROX-8FL2-PN	PROX-8QDS-PN

See page 21 for sensor specifications

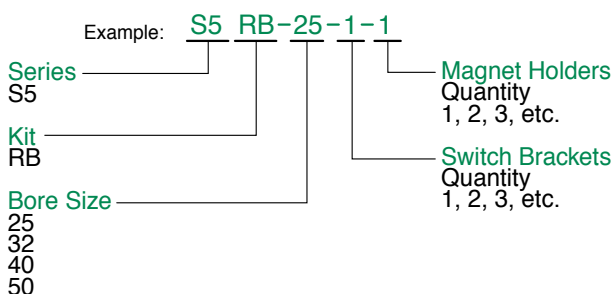


Rodless Cylinders

Switch Mounting Kits For S5 Series

The Switch mounting system for the S5 Series rodless cylinders will consist of switch mounting brackets and magnet holders. The Switch Mounting brackets attach to the extruded foot along the bottom side of the barrel while the magnet holder is attached to a tapped hole located on the underside of the externally guided carriage.

Model Number Selection Chart



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications



Rodless Cylinder (RG, S1 and G Series)

BORE	BRACKET P/N
25mm	US1RB
32mm	US1RB
40mm	US1RB
50mm	US1RB



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

MCR (Magnetically Coupled Non-Guided)

BORE	BRACKET P/N
12mm	N99-1181
16mm	N99-1181
20mm	N99-1181
25mm	N99-1181
32mm	N99-1181
40mm	N99-1181



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

MCR (Magnetically Coupled Guided)

BORE	BRACKET P/N
12mm	RM-001+N99-1185
16mm	RM-001+N99-1185
20mm	RM-001+N99-1185
25mm	RM-001+N99-1185
32mm	RM-001+N99-1185
40mm	RM-001+N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications
Also available with 8mm Prox sensor see page 21

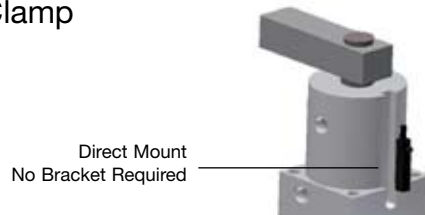


Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

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Specialty Actuator Products

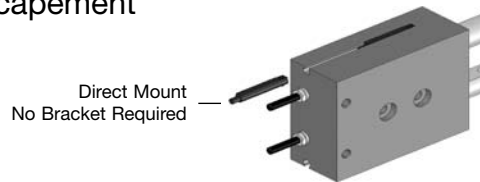
SC Series Swing Clamp



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00S	REED-QDS-M8S
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

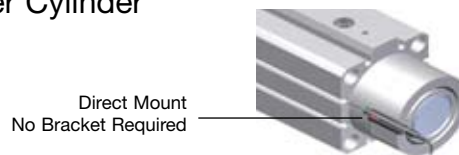
FE Series Feed Escapement



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	CS-20TP	CS-20TP-QD
Hall NPN	CS-20TN	CS-20TN-QD

See page 17 for sensor specifications

CST Series Stopper Cylinder



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	9C49-000-002	9C49-000-302
Hall PNP	9C49-000-031	9C49-000-331
Hall NPN	9C49-000-032	9C49-000-332

See page 18 for sensor specifications

Grippers

NRG Series Gripper

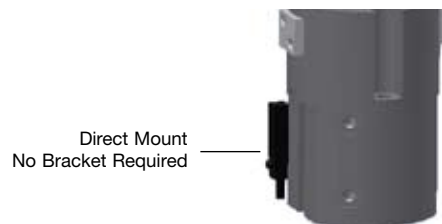
SERIES	BRACKET P/N
NRG010	N99-1185
NRG025	N99-1185
NRG050	N99-1185
NRG150	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

E Series Gripper



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications



Grippers

PG Series Gripper

SERIES	BRACKET P/N
PG	SB-PG



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	CS-20TP	CS-20TP-QD
Hall NPN	CS-20TN	CS-20TN-QD

See page 17 for sensor specifications

RPG Series Gripper

SERIES	BRACKET P/N
RPG	CT-500

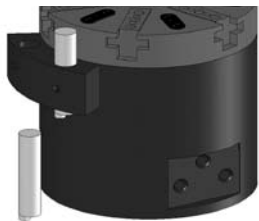


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-4FL2-P	PROX-4QDS-P
Prox NPN	PROX-4FL2-N	Not Available

See page 19 for sensor specifications

PG6J80 Series O-Ring Gripper

SERIES	BRACKET P/N
PG6J80	N99-1202

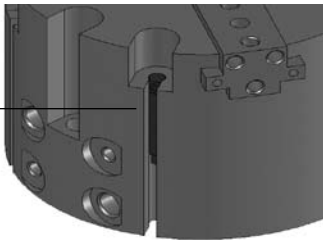


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-65FL2-PN	PROX-65QDS-P
Prox NPN	PROX-65FL2-PN	Not Available

See page 20 for sensor specifications

TJ200 Series Gripper

Direct Mount
No Bracket Required

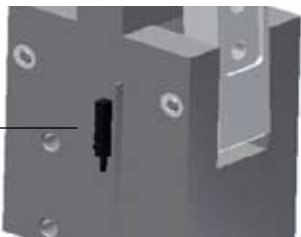


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Hall PNP	CS-20TP	CS-20TP-QD
Hall NPN	CS-20TN	CS-20TN-QD

See page 17 for sensor specifications

GR1400 Series Gripper

Direct Mount
No Bracket Required



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

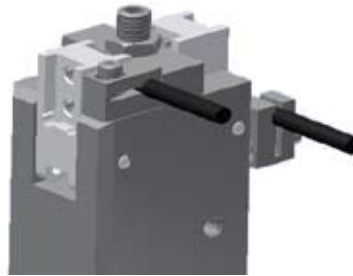


Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

Grippers

GR90 Series Gripper

SERIES	BRACKET P/N
GR90	CT-500



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-4FL2-P	PROX-4QDS-P
Prox NPN	PROX-4FL2-N	Not Available

See page 19 for sensor specifications

WG Series Gripper

SERIES	BRACKET P/N
WGS90	CT-500
WGL50	CT-500



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-4FL2-P	PROX-4QDS-P
Prox NPN	PROX-4FL2-N	Not Available

See page 19 for sensor specifications

WBG Series Gripper

SERIES	BRACKET P/N
WBG	CT-500



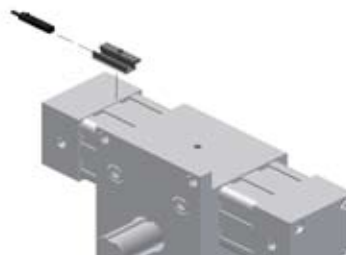
SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-4FL2-P	PROX-4QDS-P
Prox NPN	PROX-4FL2-N	Not Available

See page 19 for sensor specifications

Rotary Actuators

R Series Rotary (Profile)

BORE	BRACKET P/N
1"	N99-1185
1 1/2"	N99-1185
2"	N99-1185
2 1/2"	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

R Series (Tie Rod)

BORE	BRACKET P/N
3 1/4"	N99-1182





Rotary Actuators

AR Series Rotary

SIZE	BRACKET P/N
AR020	N99-1185
AR025	N99-1185
AR032	N99-1185



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

RW Series Rotary

SIZE	BRACKET P/N
RW030	N99-1185
RW075	N99-1185
RW125	N99-1185

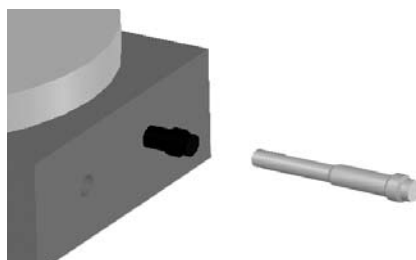


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Reed Switch	REED-FL2-00	REED-QDS-M8U
Hall PNP	PNP-FL2-00-U	PNP-QDS-M8-U
Hall NPN	NPN-FL2-00-U	NPN-QDS-M8-U

See page 13, 14, & 15 for sensor specifications

LR Series Rotary

SIZE	BRACKET P/N
LR06	RSH05
LR20	RSH05
LR60	RSH05
LR125	RSH05
LR125	RSH05

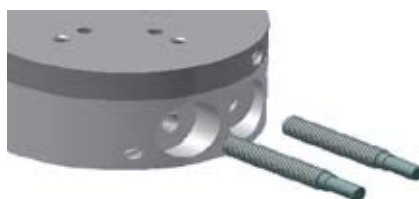


SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-5FL2-P	PROX-5QDS-P
Prox NPN	PROX-5FL2-N	Not Available

See page 19 and 20 for sensor specifications

RM Series Rotary

SIZE	BRACKET P/N
RM1	RSH05
RM2	RSH05
RM3	RSH05
RM4	RSH05
RM5	RSH05



SENSOR DESCRIPTION	STANDARD CORD SET	QUICK DISCONNECT
Prox PNP	PROX-5FL2-P	PROX-5QDS-P
Prox NPN	PROX-5FL2-N	Not Available

See page 19 and 20 for sensor specifications



Actuator Sensor Series Sensor Bracket & Sensor Part Numbers

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Sensing Brackets

Tie Rod Bracket

**BRACKET
P/N**

N99-1181
N99-1182
N99-1183
N99-1184
N99-1191
N99-1200



NB Square (Tie Rod) Bracket

**BRACKET
P/N**

900-F00-000
900-G00-000
900-H00-000



1/2" Dove Tail Bracket

**BRACKET
P/N**

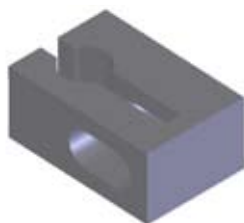
N99-1185



4mm Prox Bracket

**BRACKET
P/N**

CT-500



5mm Prox Housing

**BRACKET
P/N**

RSH05



Non-Repairable Bracket

**BRACKET
P/N**

N199-1054
N199-1055
N199-1056
N199-1057
N199-1058
N199-1059
N199-1060



C Series (Tie Rod) 4 in magnet code

**BRACKET
P/N**

SB6-L01
SB6-P01



NB Series (Tie Rod) Bracket

**BRACKET
P/N**

SC-1
SC-2
SC-3
SC-5
SC-7
SC-8



S1 Rodless Cylinder Bracket

**BRACKET
P/N**

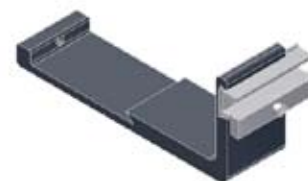
US1RB



S5 Rodless Cylinder Bracket

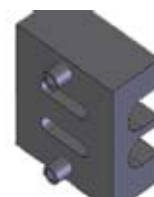
**BRACKET
P/N**

See page 7 for
Part Number



**BRACKET
P/N**

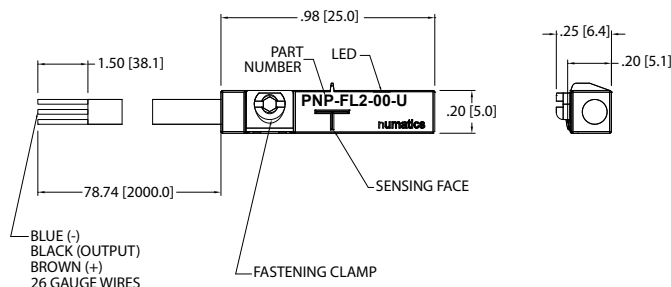
SG-PG



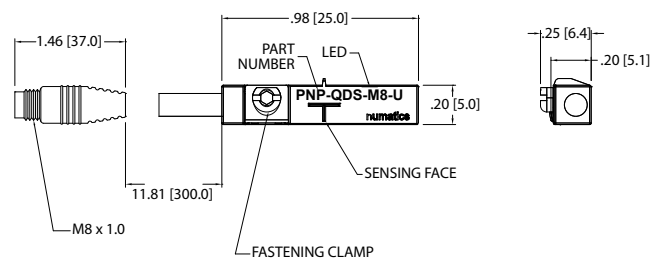


Sensing Part Numbers

PNP-FL2-00-U



PNP-QDS-M8-U



ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel

FUNCTION DISPLAY	Yellow LED
SWITCHING STATUS	
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)

REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
---------	---

ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
-------------	--

AGENCY APPROVALS	CE cUL US RoHS
------------------	----------------

ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel

FUNCTION DISPLAY	Yellow LED
SWITCHING STATUS	
CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)

REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
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ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
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AGENCY APPROVALS	CE cUL US RoHS
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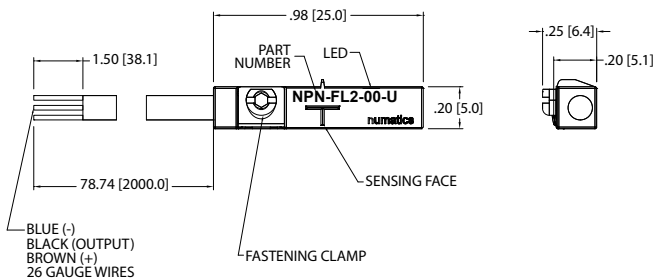


Actuator Sensor Series In-Line Sensors

numatics

Sensing Part Numbers

NPN-FL2-00-U



ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel

FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
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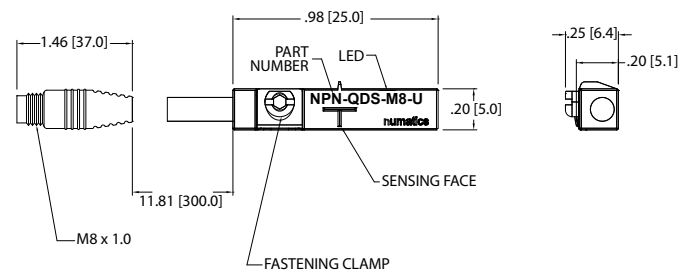
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
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REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
---------	---

ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
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AGENCY APPROVALS	  
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NPN-QDS-M8-U



ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel

FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
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CONNECTION	M8 Connector (Snap Fit) , Pur Cable (.3 m)
------------	--

REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
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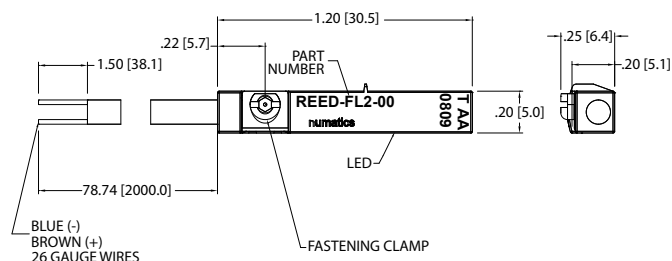
ACCESSORIES	Rubber Placehold, Cable Clip, and Cut Sheet To Be Provided with Every Switch
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AGENCY APPROVALS	  
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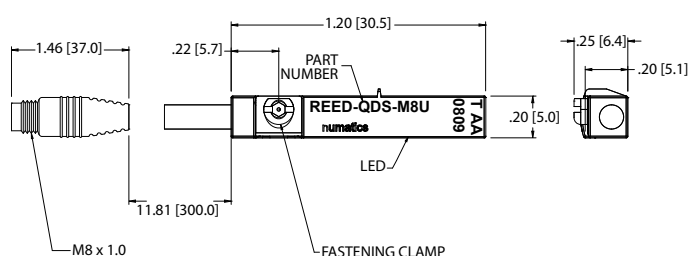
Sensing Part Numbers

REED-FL2-00 REED-FL2-00S



ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	5-120 VAC/DC
CURRENT RATING	100 mA*
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 2 x26 Gauge Wire)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc.) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	 RoHS

REED-QDS-M8U REED-QDS-M8S



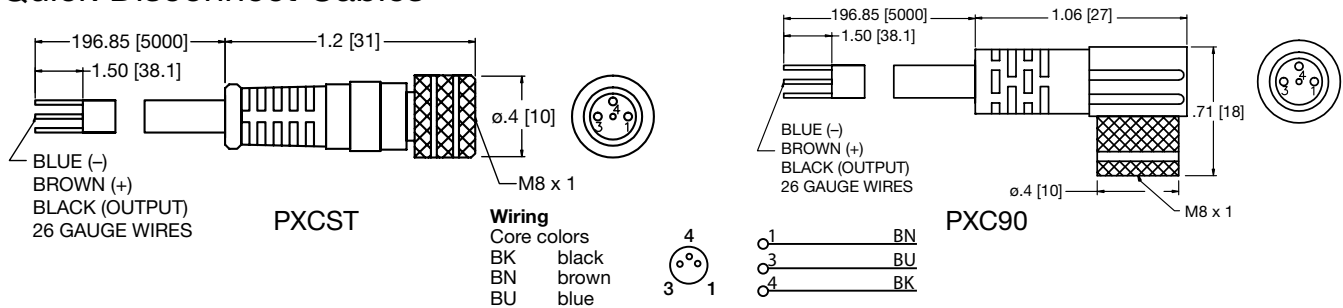
ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	*5-60 VDC / 5-50 VAC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector (Snap Fit), Pur Cable (.3m)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc.) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits #Conforms To 2008 IEC 61076-2-104. Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	 RoHS



Actuator Sensor Series Additional Sensors

numatics

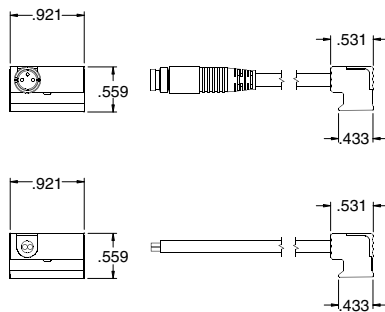
Quick Disconnect Cables



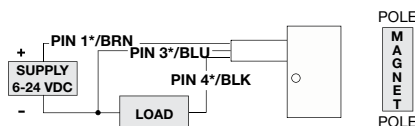
ORDER CODE	TYPE	OPERATING VOLTAGE	CURRENT RATING	CABLE MATERIAL	PROTECTION	CONNECTOR
PXCSST	Straight 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8
PXC90	90° 5 m Cable (3 x 26 Gauge wire)	60 AC/75 DC	3 A	PUR	IP 68, III	M8

World Switch Hall Effect Part Numbers

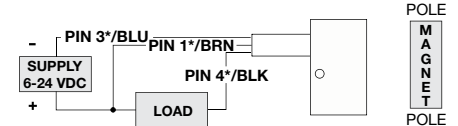
P/N	SWITCH STYLE	SWITCH TYPE	FUNCTION	SWITCHING VOLTAGE	SWITCHING CURRENT	SWITCHING POWER	VOLTAGE DROP
SH6-031	3m Wire Version	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (PNP)	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-021	8m Connector Pigtail	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (PNP)	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-032	3m Wire Version	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (NPN)	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts
SH6-022	8m Connector Pigtail	Hall Effect for Reed Magnet & Light Sourcing	Normally Open Sourcing (NPN)	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	0.5 Volts



PNP Sourcing

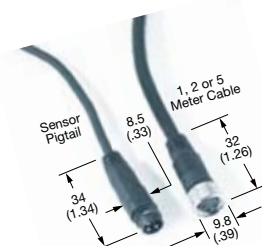
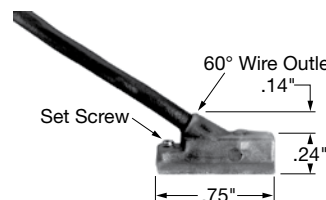


NPN Sinking



Dove tail Sensor with 45 Degree Wire

- Encased in a plastic housing, dovetail style electronic sensors are corrosion resistant. 45° wire outlet allows close mounting.



Dovetail Style Magnetic Sensor with LED

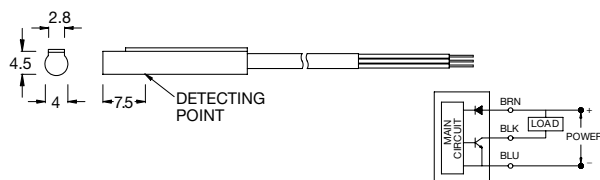
SENSOR TYPE	STANDARD CORD SET	QUICK DISCONNECT	ELECTRICAL CHARACTERISTICS
Electronic	949-200-031	949-200-331	Sourcing PNP 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop
Electronic	949-200-032	949-200-332	Sinking NPN 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop

Note*: Quick disconnect styles are supplied with 6 inch pigtail with male connector.
Order female cordsets separately.

Sensor Temperature Range
-20° to +80° C (-4° to +176° F)

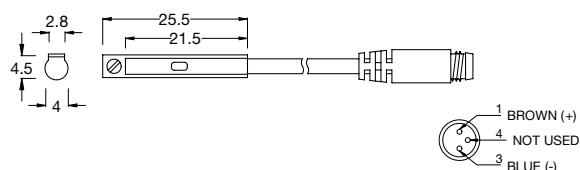


Electro Switch (NPN NO) Flying Lead - CS-20TN



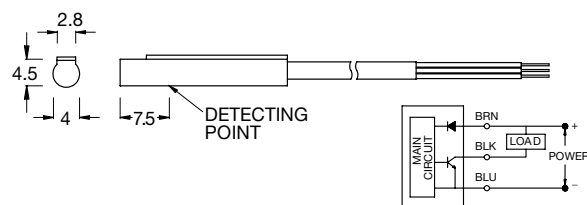
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Sourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	—
Operating 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
Set Screw Max. Torque	Suppression 1.77 in-lbs (0.2 N-m)

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



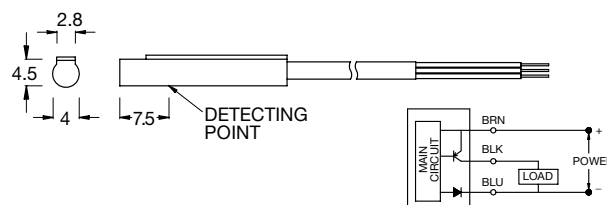
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Sourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	—
Operating 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	Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

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



Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Sourcing
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	Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

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



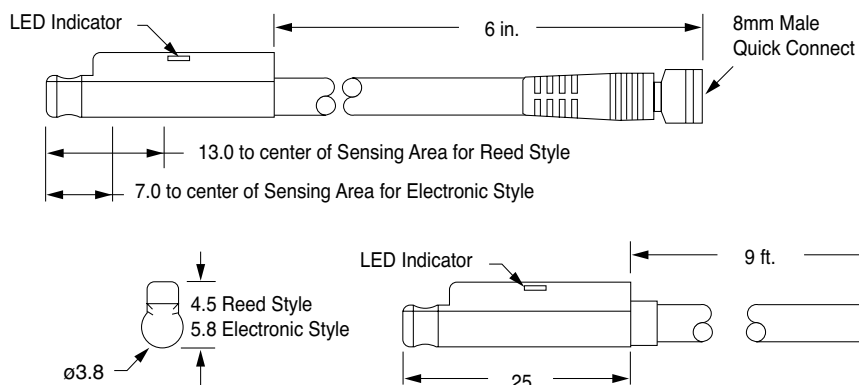
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	PNP Current Sourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	1.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Green
Cable	Abrasion 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	Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)



Actuator Sensor Series Additional Sensors

numatics®

Sensor Dimensions (mm unless noted)

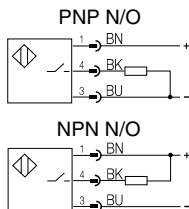
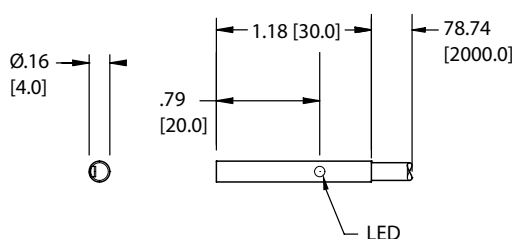


All sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds.

SENSOR TYPE	FUNCTION	SWITCHING VOLTAGE	SWITCHING CURRENT	SWITCHING POWER	SWITCHING SPEED	VOLTAGE DROP	STANDARD CORD SET	QUICK CONNECT PART NO.
Reed Switch for PLC's w/LED (current limiting)	SPST Normally Open	50 - 60 VAC/DC	0.04 Amp max 0.005 Amp min.	4 Watts max.	0.5 ms operate 0.1 ms release	2.5 Volts	9C49-000-002	9C49-000-302 Requires 3 pin cordset
Electronic LED and Sourcing	PNP Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5µs operate 0.5µs release	1.5 Volts	9C49-000-031	9C49-000-331 Requires 3 pin cordset
Electronic LED and Sinking	NPN Normally Open	6-30 VDC	0.2 Amp max.	6 Watts max.	1.5µs operate 0.5µs release	1.5 Volts	9C49-000-032	9C49-000-332 Requires 3 pin cordset



Prox Switch (NPN NO) Flying Lead - PROX-4FL2-N Prox Switch (PNP NO) Flying Lead - PROX-4FL2-P

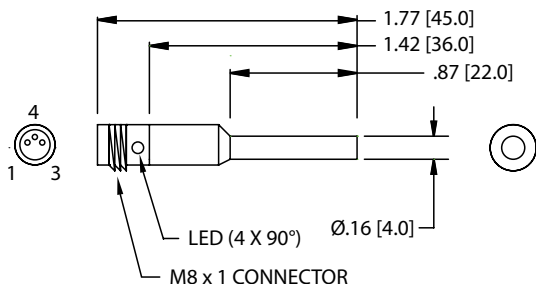


Electrical Design
Output
Operating Voltage
Current Rating
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor

Housing Material
Function Display Switching Status
Connection

3-Wire DC PNP/NPN
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)
Yes
Yes
< 2.5V
< 15 mA @ 24V
.8mm ± 10%
> 2000 Hz
-25°C to 70°C
IP 65, III
-10 - 10% OF Sr
1 - 15% OF Sr
0 - .65mm
Mild Steel=1, Stainless Steel=.7,
Brass=.5, Alum.=.4, Copper=.3
Housing; Stainless Steel: POM
Yellow LED
PVC Cable, 2m, 3 x .14mm2

Prox Switch (PNP NO), 8 mm connector - PROX-4QDS-P

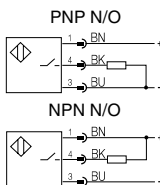
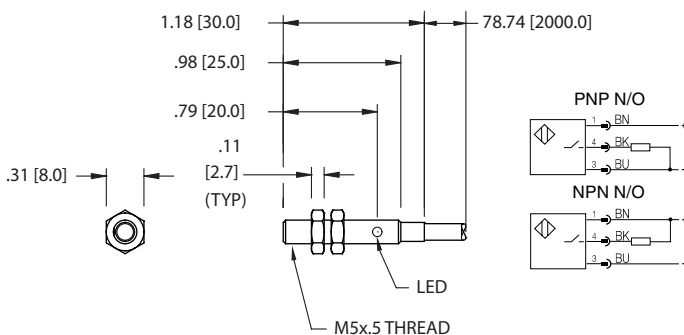


Mechanical Data
Degree of protection per IEC 529
Housing material
Material of sensing face
Connection
Approvals

IP 65
stainless steel
POM
M8 Connector



Prox Switch (NPN NO) Flying Lead - PROX-5FL2-N Prox Switch (PNP NO) Flying Lead - PROX-5FL2-P



Electrical Design
Output
Operating Voltage
Current Rating
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor

Housing Material
Function Display Switching Status
Connection

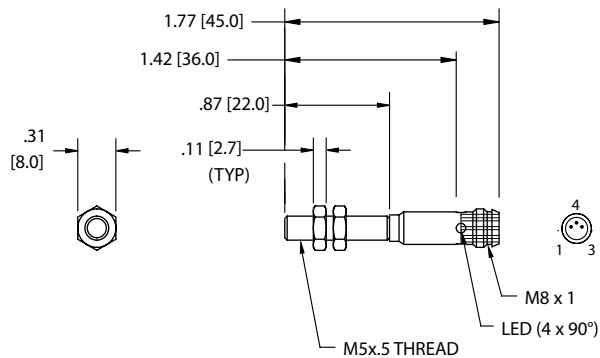
3-Wire DC PNP/NPN
Normally Open
10-36 VDC
100 mA
Yes (Non-Latching)
Yes
Yes
< 2.5V
< 15 mA @ 24V
.8mm ± 10%
> 2000 Hz
-25°C to 70°C
IP 65, III
-10 - 10% OF Sr
1 - 15% OF Sr
0 - .65mm
Mild Steel=1, Stainless Steel=.7,
Brass=.5, Alum.=.4, Copper=.3
Housing; Stainless Steel: POM
Red LED
PVC Cable, 2m, 3 x .14mm2



Actuator Sensor Series Additional Sensors

numatics

Prox Switch (PNP NO) 8 mm connector - PROX-5QDS-P



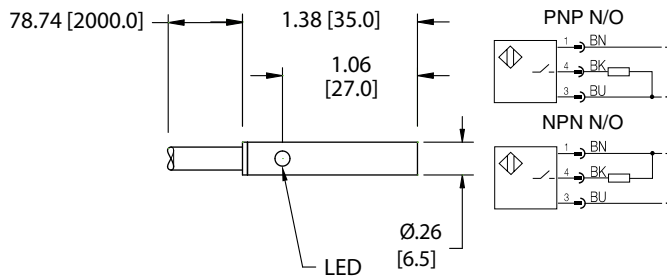
Mechanical Data

Degree of protection per IEC 529
Housing material
Material of sensing face
Connection
Approvals

IP 65
stainless steel
POM
M8 Connector



Prox Switch (PNP & NPN NO) Flying Leads - PROX-65FL2-PN



Electrical Design

Output
Operating Voltage
Current Rating
Minimum Load Current
Leakage Current
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Real Sensing Range
Switching Frequency
Ambient Temperature
Protection
Switch-Point Drift
Hysteresis
Operating Distance
Correction Factor

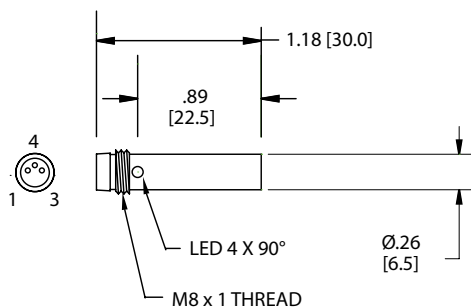
DC PNP/NPN

Normally Open
10-36 VDC
200 mA
4 mA
< .8mA

Housing Material
Function Display Switching Status
Connection

No
No
No
< 2.6V
1mm ± 10%
> 900 Hz
-25°C to 80°C
IP 67
-10 - 10% OF Sr
1 - 15% OF Sr
0 - .8mm
Mild Steel=.1, Stainless Steel=.7,
Brass=.5, Alum.=.4, Copper=.3
Brass with Bronze Coated
Yellow LED
PVC Cable, 2m, 3 x .14mm2

Prox Switch (PNP NO) 8 mm connector - PROX-65QDS-P



Mechanical Data

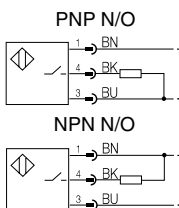
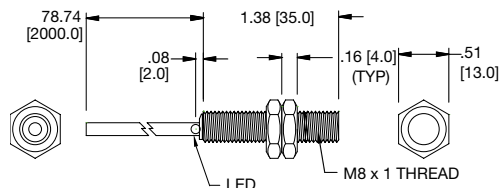
Degree of protection per IEC 529
Housing material
Material of sensing face
Connection
Approvals

IP 65
stainless steel
PA 12
cable
cULus





Prox Switch (PNP & NPN NO) Flying Leads - PROX-8FL2-PN



Electrical Design

Output

Operating Voltage
Current Rating
Minimum Load Current
Leakage Current
Short Circuit Protection
Overload Protection
Reverse Polarity Protection
Voltage Drop
Current Consumption
Switching Frequency
Ambient Temperature
Protection
Hysteresis
Operating Distance
Correction Factor

Housing Material

Function Display Switching Status

Connection

REMARKS

3-Wire DC PNP;
2-Wire DC PNP/NPN

Normally Open

10-30 VDC

100 mA

2 mA*

< .5 mA

Yes (Non-Latching)

Yes

Yes

< 2.8V

< 10 mA**

> 1000 Hz

0°C to 70°C

IP 67, III

1 - 15% OF Sr

0 - 2.4mm

Mild Steel=.1, Stainless Steel=.7,

Brass=.5, Alum.=.4, Copper=.3

Brass with Bronze Coated

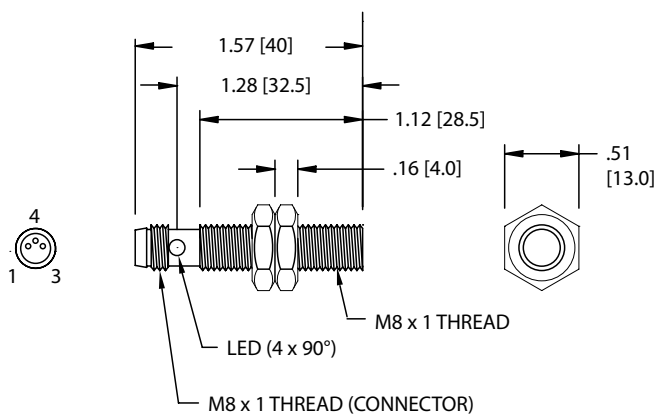
Yellow LED

PVC Cable, 2m, 3 x .14mm2

*ONLY IN 2-WIRE OPERATION

**ONLY IN 3-WIRE OPERATION

Prox Switch (PNP & NPN NO) 8 mm connector - PROX-8QDS-PN



Mechanical Data

Degree of protection per IEC 529

Housing material

Material of sensing face

Connection

No. of wires x gauge

Approvals

IP 67

stainless steel

PBTP

cable

3 x 26 AWG

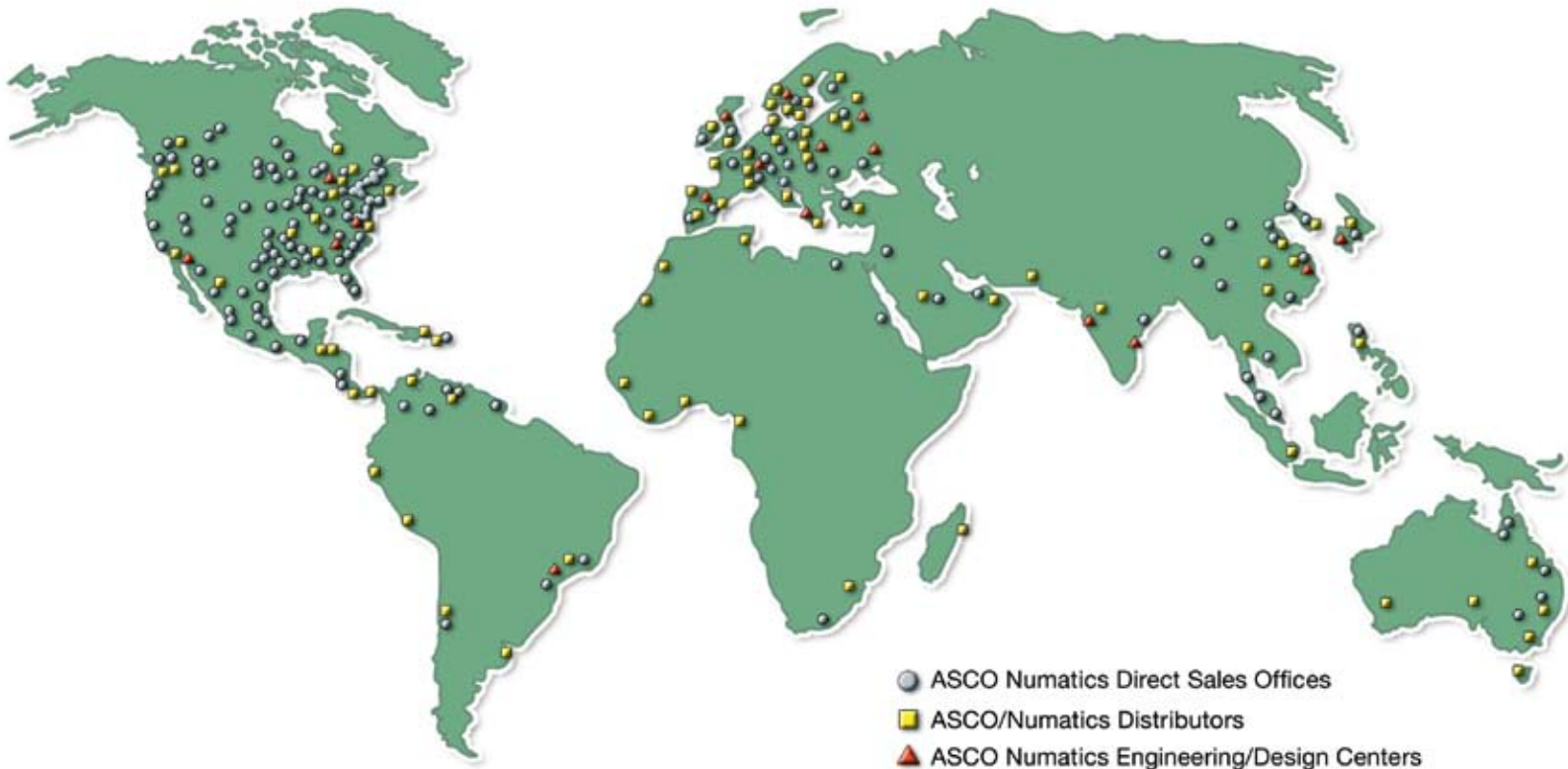
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