

Inductive Barrel Sensor Selection Guide

Embeddable/Nonembeddable Barrels				
				
Housing	30 mm	30 mm	30 mm	30 mm
Sensing Range	10 - 30 mm	10 - 20 mm	10 - 30 mm	10 - 20 mm
Pages	B117 - 132	B127	B143	B133 - 140
Features	Uprox	Uprox	Uprox	Uprox
2-wire	•	•	•	•
3/4-wire	•	•	•	•
2-wire AC/DC	•	•	•	•

Embeddable/Nonembeddable Barrels				
				
Housing	30 mm	30 mm	40 mm	47 mm
Sensing Range	10 - 20 mm	10 - 20 mm	30 mm	20 - 25 mm
Pages	B145	B145	B147	B147
Features	Uprox			
2-wire				
3/4-wire	•	•	•	•
2-wire AC/DC	•	•	•	•

Embeddable/Nonembeddable Barrels				
				
Housing	47 mm	40 mm	47 mm	Variable
Sensing Range	20 - 25 mm	15 - 30 mm	25 - 40 mm	1 - 15 mm
Pages	B147	B149	B149	B151 - 162
Features				
2-wire				•
3/4-wire	•	•	•	
2-wire AC/DC	•	•	•	

We reserve the right to make technical alterations without prior notice.



Inductive Barrel Sensor Part Number Key

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														Wiring Option*		Special Option Code**	
										A	DZ	30	X2				
Mounting										Number of LEDs							
B = embeddable										(blank) = no LEDs							
N = nonembeddable										X = 1 LED							
Principle of Operation										X2 = 2 LEDs							
I = inductive										Voltage Range							
Rated Operating Distance (mm)										AC/DC: (No SCP**)							
Sensing Characteristics										3 = 20-250 VAC, 10-300 VDC							
U = Uprox® sensor										14 = 20-132 VAC, 10-140 VDC							
Housing Material Modifier										31 = 20-250 VAC, 10-300 VDC, plastic barrel							
E = stainless steel										33 = 35-250 VAC, grounded metal barrel							
Housing Style										AC/DC: (Latched SCP)							
Barrel - Metal										30 = 20-250 VAC, 10-300 VDC							
G = full threading, generally chrome plated brass										32 = 20-250 VAC, 10-300 VDC							
GS = threaded side sensor										40 = 20-140 VAC/DC, high off-state current							
H = smooth, chrome plated brass or stainless steel										DC:							
HS = smooth side sensor										4 = 10-65 VDC, polarity protected, pulsed SCP**							
M = partial threading, chrome plated brass										6 = 10-30 VDC, polarity protected, pulsed SCP							
Barrel - Plastic										7 = 10-30 VDC, TTL compatible							
K = smooth										8 = 20-30 VDC, polarity protected, pulsed SCP							
P = full threading										41 = 10-55 VDC, polarity protected, pulsed SCP							
S = partial threading										44 = 10-55 VDC							
SK = side sensing/slot sensor, plastic housing										45 = 8.4-64 Volts							
Primary Barrel Modifier										**SCP = short-circuit and overload protection							
T = PTFE coated										Output							
Housing Diameter or Height (mm)										D = 2-wire DC (transistor output)							
Secondary Barrel Modifier										DZ = 2-wire AC/DC, (power MOSFET output)							
CA = conduit adaptor										G = 2-wire DC, low voltage drop							
E = extended barrel length										N = NPN transistor (current sinking)							
EE = extra long barrel length										P = PNP transistor (current sourcing)							
F = stainless steel face										Z = 2-wire AC or 2-wire AC/DC							
FE = stainless steel face, extended barrel length										Output Function							
H = Stoneface®										A = normally open (N.O.)							
K = short barrel length										DA = dynamic output (ring sensor), normally open							
M = medium barrel length										F = connection programmable (N.O or N.C.)							
S = side sensing										R = normally closed (N.C.)							
SE = extended length										V = complementary outputs: one N.O., one N.C.							
SK = right-angle terminal chamber										Y0 = NAMUR output, requires switching amplifier							
SR = straight terminal chamber										Y1 = NAMUR output, requires switching amplifier, ATEX Approved							
T = barb fitting at cable entry																	
TC = terminal chamber																	
WD = washdown IP68/IP69K																	

NOTE:

Part number keys are to assist in identification only.

Verify new part numbers with factory; some configurations are not possible.

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Inductive Barrel Sensor Part Number Key

Wiring Options*

A. Connectorized Sensor

Bi2-M12-AN6X -

H1141

Connector Family

B1 = Minifast®, 7/8"-16UN, metal, male
B2 = Minifast®, 7/8"-16UN, plastic, male
B3 = Microfast®, 1/2"-20UNF, metal, male
H1 = Eurofast®, M12x1, metal or plastic, male
V1 = Picofast®, snap and M8x1, metal, male (Q08 snap only)
V2 = Picofast®, snap and M8x1, male (Q08 only)

Factory Code

Example:
0 = non-standard wiring
1 = standard wiring
3 = N.C. DC output on pin 4
4 = N.O. 2-wire DC output on pin 4

Connector/Sensor Transition

1 = straight
3 = straight with adapter
4 = right-angle with adapter

Number of Pins

B. Potted Cable

Bi2-G12-AN6X

7M

Cable Length

(blank) = 2 meter cable
7M = 7 meter cable
*M = custom cable lengths available

C. Potted Cable with Molded Connector

Bi2-G12-Y0X - 0.2M - RS 4.21T

Cable Length

examples:
0.2M = 0.2 meters (minimum)
2M = 2 meter cable
7M = 7 meter cable

Standard Cordset Connector

AC: RSM 30 = Minifast, 7/8"-16UN, metal, male, 3-conductor
SB 3T = Microfast, 1/2"-20UNF, metal, male, 30 conductor
DC: RS 4T = Eurofast, M12x1, metal or plastic, male, 3-conductor
RS 4.2T = Eurofast, M12x1, metal or plastic, male, 2-conductor
RS 4.21T = Eurofast, M12x1, metal or plastic, male, NAMUR, 2-conductor
RS 4.4T = Eurofast, M12x1, metal or plastic, male, 4-conductor
RSM 40 = Minifast, 7/8"-16UN, metal, male, 4-conductor
PSG 3 = Picofast, snap, plastic, male, 3-conductor
PSG 3M = Picofast, M8x1, male, 3-conductor

Option Codes for Special or Custom-Built Sensors**

Bi2-S12-AN7X /S100 or Bi10-M30-AN6X-H1141 /F2

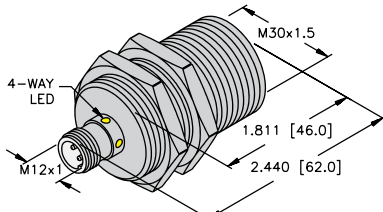
examples:
/S34 = weld field immune
/S90 = TPU cable
/S97 = -40 °C (-40 °F) operating temperature
/S100 = +100 °C (+212 °F) operating temperature
/S1589 = barrel sensors with Weldguard® laminate
/S1610 = barrel sensors with tool steel sleeve and Weldguard® laminate

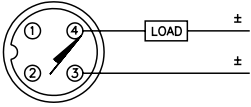
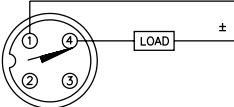
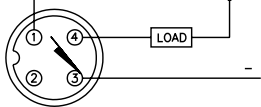
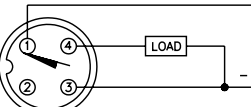
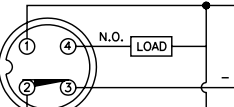
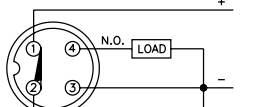
example:
/F2 = alternate oscillator frequency

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Inductive Barrel Sensors | 30 mm

Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	A  30 mm - Embeddable, M12 Eurofast Connection

Wiring Diagrams/Mating Cordsets		
1  Mating Cordset: RK 4.2T-*	2  Mating Cordset: RK 4.23T-*	3  Mating Cordset: RK 4T-*, RKC 4T-*/S1587
4  Mating Cordset: RK 4T-*, RKC 4T-*/S1587	5  Mating Cordset: RK 4.4T-*	6  Mating Cordset: RK 4.4T-*

A2 2-wire DC - (AD, RD, AG)		
Ripple: ≤10% Differential Travel (Hysteresis): 3-15% (5% typical) Voltage Drop Across Conducting Sensor: Non-polarized (AD) <5.0 V Trigger Current for Short Circuit Protection: ≥120 mA Minimum Load Current: ≥3.0 mA	Off-State (Leakage) Current: ≤0.8 mA Power-On Effect: Per IEC 947-5-2 Transient Protection: Per EN 60947-5-2 Shock: 30 g, 11 ms Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes Repeatability: ≤2% of Rated Operating Distance	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
Ripple: ≤10% Differential Travel (Hysteresis): 3-15% (5% typical) Voltage Drop Across Conducting Sensor: ≤1.8 V Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current Off-State (Leakage) Current: ≤0.1 mA No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)	Time Delay Before Availability: ≤8 ms Power-On Effect: Per IEC 947-5-2 Reverse Polarity Protection: Incorporated Wire-Break Protection: Incorporated Transient Protection: Per EN 60947-5-2 Temperature Drift: ≤±10% Shock: 30 g, 11 ms Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes Repeatability: ≤2% of Rated Operating Distance	

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Inductive Barrel Sensors | 30 mm

Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi20U-M30-AN6X-H1141 1644888	Uprox3	20	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi20U-M30-AP6X-H1141 1644880	Uprox3	20	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	4	A4
Bi15U-M30-AN6X-H1141 1636736	Uprox+	15	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi15U-M30-AP6X-H1141 1636732	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Bi15U-EM30-AP6X-H1141 1636733	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	4	A4
Bi15-M30-AN6X-H1141 4618600	Extended Range	15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi15-EM30H-AN6X-H1141 4618692	Ext. Range, Stoneface	15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	3	A4
Bi15-M30-AP6X-H1141 46185	Extended Range	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi15-EM30H-AP6X-H1141 4618592	Ext. Range, Stoneface	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	4	A4
Bi15-EM30-AP6X-H1141/S1589 4618593	Weldguard	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	4	A4
Bi15-M30-VN4X-H1141 4570711	Ext. Range, Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi15-M30-VP4X-H1141 4570710	Ext. Range, Comp. Outputs	15	4-wire DC PNP	10-65 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Bi12-M30-AD4X-H1141 4417041	Extended Range	12	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi10U-M30-AD4X-H1144 4405072	Uprox	10	2-wire DC	10-65 VDC	10	≤100	-25 to +70	IP68	CPB	LCP	N/A	YE	A	2	A2
Bi10U-M30-AN6X-H1141 1636150	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	3	A4
Bi10U-EM30-AN6X-H1141 1636350	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Bi10U-M30-AP6X-H1141 1636140	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	4	A4
Bi10U-M30-AP6X2-H1141 1636145	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	GN	YE	A	4	A4
Bi10U-EM30-AP6X-H1141 1636340	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	4	A4
Bi10U-M30-VP4X-H1141 1582253	Uprox, Comp. Outputs	10	4-wire DC PNP	10-65 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	6	A4
Bi10-M30-AD4X-H1141 44175		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi10-M30-AN6X-H1141 46176		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi10-M30-AP6X-H1141 46175		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi10-M30-VN4X-H1141 15716	Comp. Outputs	10	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi10-M30-VP4X-H1141 15616	Comp. Outputs	10	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4

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