

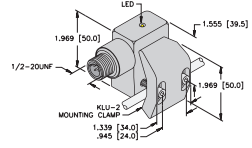
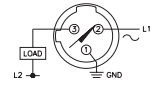
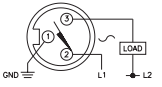
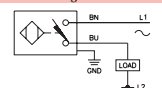
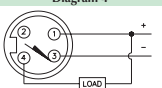
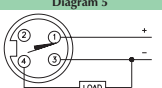
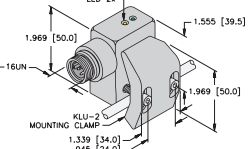
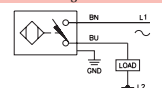
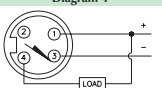
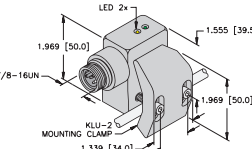
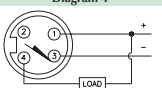
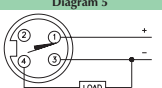
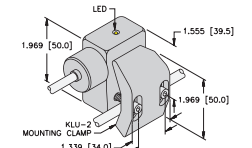
# Inductive Cylinder Position Sensors



# Industrial Automation

TURCK mold-on connectors available on all cable sensors. See page A5.



Housing Style	Part Number	ID Number	Features	Magnetic Adaptation Strength (Gauss)	Output	Output	Switching Freq. (Hz)	Operating Current (mA) VAC/VDC	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Mating Cord, Cable Length/Jacket	Wiring Diagram #	Wiring Diagrams
<b>A23 - microfast® Connector</b> 	BIM-A23-AZ3X-B3131/S34	M1346291	KLU-2 Included, WFI	20-350	2-Wire AC	20-250 VAC	20	≤500	-25 to +70	IP 67	AL	PBT	N/A	YE	KB 3T-*	1	<b>Diagram 1</b>  <b>Diagram 2</b>  <b>Diagram 3</b>  <b>Diagram 4</b>  <b>Diagram 5</b> 
<b>A23 - minifast® Connector</b> 	BIM-A23-AN6X-B1141/S34	M4688991	KLU-2 Included, WFI	20-350	3-Wire DC NPN	10-30 VDC	20	≤200	-25 to +70	IP 67	AL	PBT	N/A	YE	RKM 40-*M	4	<b>Diagram 3</b>  <b>Diagram 4</b> 
	BIM-A23-AP6X-B1141/S34	M4688891	KLU-2 Included, WFI	20-350	3-Wire DC PNP	10-30 VDC	20	≤200	-25 to +70	IP 67	AL	PBT	N/A	YE	RKM 40-*M	5	
<b>A23 - minifast® Connector</b> 	BIM-A23-ADZ30X2-B1131/S34	M4230091	KLU-2 Included, WFI	20-350	2-Wire AC/DC	20-250 VAC 10-300 VDC	20	≤400/300	-25 to +70	IP 67	AL	PBT	GN	YE	RKM 311-*M	2	<b>Diagram 3</b>  <b>Diagram 5</b> 
	BIM-A23-AZ3X-B1131/S34	M1346191	KLU-2 Included, WFI	20-350	2-Wire AC	20-250 VAC	20	≤500	-25 to +70	IP 67	AL	PBT	N/A	YE	RKM 311-*M	2	
<b>A23 - Potted-In Cable</b> 	BIM-A23-AZ3X/S34	M1346091	KLU-2 Included, WFI	20-350	2-Wire AC	20-250 VAC	20	≤500	-25 to +70	IP 67	AL	PBT	N/A	YE	2M/PVC	3	

\* Length in meters.

Cylinder

For detailed sensor specifications see Section A.  
Normally Closed versions available upon request, consult factory.

For material descriptions see page A34.

# Sensors

## General Specifications

### 2-Wire DC NAMUR

Differential Travel (Hysteresis)	1-10% (5% typical)
Nominal Voltage	8.2 VDC (EN60947-5-6)
Resistance Change from Nonactivated to Activated Condition	typical <1.0 to >8.0 kΩ
Resulting Current Change	≥2.2 mA to ≤1.0 mA
Recommended Switching Point for Remote Amplifier	>1.2 to <2.1 mA, typ. 1.55 mA ON/1.75 mA OFF
Power-On Effect	Realized in Amplifier
Reverse Polarity Protection	Incorporated
Wire-Break Protection	Realized in Amplifier
Transient Protection	Realized in Amplifier
Shock	30 g, 11 ms
Vibration	55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability	≤2% of Rated Operating Distance

### 2-Wire DC

Ripple	≤10%
Differential Travel (Hysteresis)	3-15% (5% typical)
Voltage Drop Across Conducting Sensor	Non-polarized (AD) <5.0 V Polarized (AG) <4.0 V
Trigger Current for Overload 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

### REED (AC) and (DC)

Ripple	≤10%
Differential Travel (Hysteresis)	≤1 mm (Depends on magnet)
Maximum Switching Capacity	10 W
No-Load Current	0 mA
Maximum Approach Velocity	≤10 m/s
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	≥ ±0.1 mm (constant temperature & voltage)
Temperature Drift	≤0.1 mm
Voltage Drop	≤0.5 Volts

### 3-Wire DC

Ripple . . . . .	≤10%
Differential Travel (Hysteresis). . . . .	3-15% (5% typical)
Voltage Drop Across Conducting Sensor. . . . .	≤1.8 V
	- Si...K08/K10(AP71, AN7) . . . ≤0.7 V
	- Bi/Ni./S34 . . . . . ≤1.8 V
	- Bi 2-Q8SE-AP/AN.. . . . ≤2.5 V
Trigger Current for Overload Protection . . . . .	≥220 mA on 200 mA Load Current
	≥170 mA on 150 mA Load Current
	≥120 mA on 100 mA Load Current
Off-State (Leakage) Current . . . . .	<100 μA
No-Load Current . . . . .	<10 mA (Uprox ≤15 mA)
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
Shock . . . . .	30 g, 11 ms
Vibration . . . . .	55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability . . . . .	≤2% of Rated Operating Distance
	Bi 2-Q8SE-AP/AN.. ≤5% of Rated Operating Distance

### 4-Wire DC

Ripple. . . . .	≤10%
Differential Travel (Hysteresis). . . . .	3-15% (5% typical)
Voltage Drop Across Conducting Sensor. . . . .	≤1.8 V at 200 mA
Trigger Current for Overload Protection . . . . .	≥220 mA on 200 mA Load Current
	≥170 mA on 150 mA Load Current
	≥120 mA on 100 mA Load Current
Off-State (Leakage) Current . . . . .	<100 μA
No-Load Current . . . . .	<10 mA (Uprox ≤15 mA)
Power-On Effect . . . . .	Per IEC 947-5-2
Reverse Polarity Protection . . . . .	Incorporated
Wire-Break Protection . . . . .	Incorporated
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

# Sensors

## General Specifications

### 2-Wire AC w/o Short-Circuit Protection

Line Frequency . . . . .	40-60 Hz
Differential Travel (Hysteresis) . . . . .	3-15% (5% typical)
Voltage Drop Across Conducting Sensor . . . . .	≤6.0 V at 400 mA
	8 & 12 mm ≤6.0 V at 100 mA
Continuous Load Current . . . . .	≤400 mA
	8 & 12 mm ≤100 mA
Off-State (Leakage) Current . . . . .	≤1.7 mA
Minimum Load Current . . . . .	≥5.0 mA
Inrush Current . . . . .	≤8.0 A (≤10 ms, 5% Duty Cycle)
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

### 2-Wire AC/DC w/Short-Circuit Protection

Line Frequency . . . . .	40-60 Hz
Differential Travel (Hysteresis) . . . . .	3-15% (5% typical)
Voltage Drop Across Conducting Sensor . . . . .	≤6.0 V at 400 mA
	8 & 12 mm ≤6.0 V at 100 mA
Trigger Current for Overload Protection . . . . .	AC: ≥440 mA; DC: ≥330 mA
	8 & 12 mm AC: ≥120 mA; DC: ≥120 mA
Continuous Load Current . . . . .	AC: ≤400 mA; DC: ≤300 mA
	8 & 12 mm AC: ≥100 mA; DC: ≥100 mA
Off-State (Leakage) Current . . . . .	≤1.7 mA (AC)
	≤1.5 mA (DC)
Minimum Load Current . . . . .	≥3.0 mA
Inrush Current . . . . .	4.0 A (≤20 ms, 10% Duty Cycle)
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