



## *stone* *face*®

Turck's Stoneface sensors use a glass filled thermoset plastic material on the sensing face that:

- Protects the sensing face from abrasion
- Is resistant to weld slag buildup that is often a result of MIG/TIG welding
- Is available with PTFE coated barrels to shed weld slag
  - Protects against:



Impact



MIG/TIG Weld



Abrasion


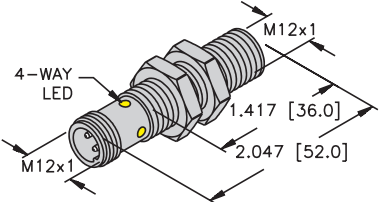
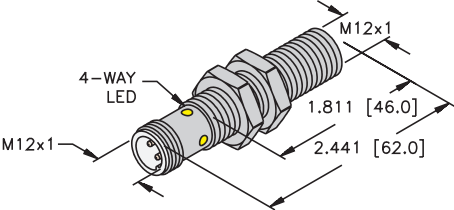
### Embeddable Metal Barrel

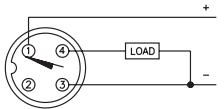
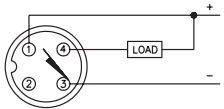
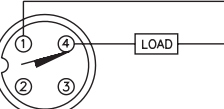
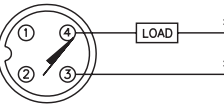


	12 mm	18 mm	30 mm
Housing	12 mm	18 mm	30 mm
Sensing Range	2 - 4 mm	5 - 8 mm	10 - 15 mm
Pages	72, 78	74, 78	76 - 78

# Stoneface | 12 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection, Extended Barrel Length</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.2T-*</p>

A2	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A3	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math>  Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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

# Stoneface | 12 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


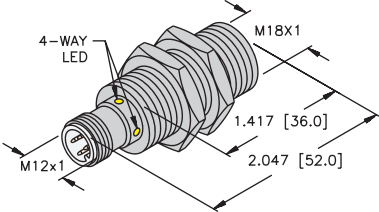
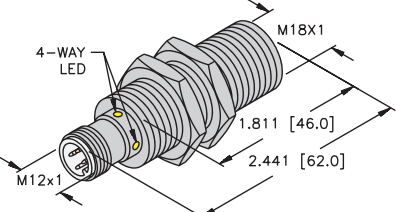
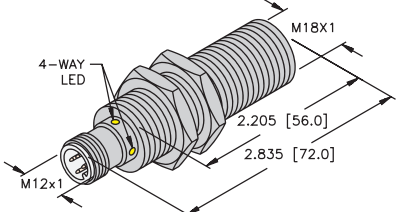
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BI4-MT12H-AN6X-H1141 4607194	PTFE	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	2	A2
BI4-MT12H-AP6X-H1141 4607093	PTFE	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	1	A2
BI4-MT12HE-AN6X-H1141 4607197	PTFE	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	B	2	A2
BI4-MT12HE-AP6X-H1141 4608093	PTFE	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	B	1	A2
BI3U-EM12H-AP6X-H1141 1634312	Uprox	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	SF	N/A	YE	A	1	A2
BI3U-EM12HE-AN6X2-H1141 1634311	Uprox	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	SF	GN	YE	B	2	A2
BI3U-EM12HE-AP6X2-H1141 1634310	Uprox	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	SF	GN	YE	B	1	A2
BI3U-MT12H-AP6X-H1141 1634212	Uprox, PTFE	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	SF	N/A	YE	A	1	A2
BI3U-MT12HE-AN6X2-H1141 1634230	Uprox, PTFE	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	SF	GN	YE	B	2	A2
BI3U-MT12HE-AP6X2-H1141 1634220	Uprox, PTFE	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	SF	GN	YE	B	1	A2
BI3-MT12H-AD4X-H1144 44050983	PTFE	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	A	3	A3
BI3-MT12HE-AD4X-H1141 4405088	PTFE	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	B	4	A3

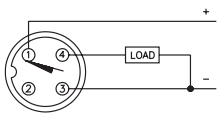
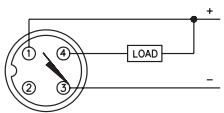
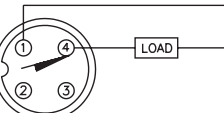
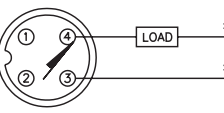
We reserve the right to make technical alterations without prior notice.

Stoneface

# Stoneface | 18 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Ext. Barrel Length, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.2T-*</p>

A2	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A3	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math>  Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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

# Stoneface | 18 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


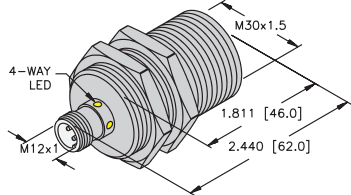
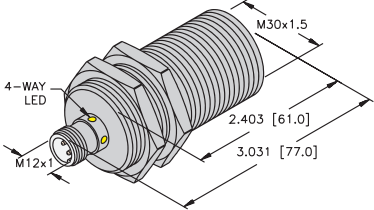
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>BI8-EM18H-AP6X-H1141</b> 4615094		8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	1	A2
<b>BI8-EMT18H-AP6X-H1141</b> 46150941	PTFE	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	1	A2
<b>BI8-EM18HE-AN6X-H1141</b> 4615194		8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	C	2	A2
<b>BI8-EM18HE-AP6X-H1141</b> 4614100		8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	C	1	A2
<b>BI8-EMT18HE-AP6X-H1141</b> 46150943	PTFE	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	TC	SF	N/A	YE	C	1	A2
<b>BI7-MT18H-AD4X-H1141</b> 44145808	PTFE	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	B	4	A3
<b>BI7-EM18HE-AD4X-H1141</b> 44145802		7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	SF	N/A	YE	C	4	A3
<b>BI7-MT18HE-AD4X-H1141</b> 4414597	PTFE	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	C	4	A3
<b>BI7-MT18HE-AD4X-H1144</b> 4414598	PTFE	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	C	3	A3
<b>BI5U-EM18H-AP6X-H1141</b> 1635112	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	SF	N/A	YE	A	2	A2
<b>BI5U-EM18H-AN6X2-H1141/S395</b> 1635146	Uprox	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	SF	GN	YE	B	2	A2
<b>BI5U-EM18H-AP6X2-H1141/S395</b> 1635158	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	SF	GN	YE	B	1	A2
<b>BI5U-MT18H-AP6X2-H1141/S395</b> 1635220	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	TC	SF	GN	YE	B	1	A2
<b>BI5-EM18H-AP6X-H1141</b> 4614687		5	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	1	A2

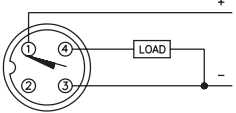
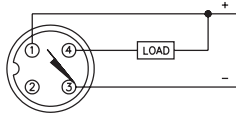
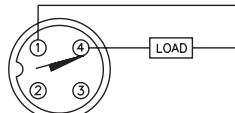
We reserve the right to make technical alterations without prior notice.

Stoneface

# Stoneface | 30 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection, Extended Barrel Length</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.23T-*</p>

A2	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A3	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math>  Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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

# Stoneface | 30 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


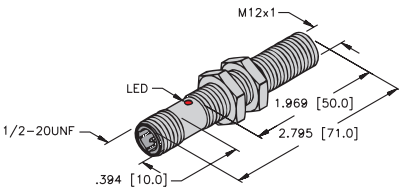
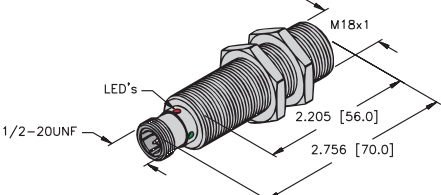
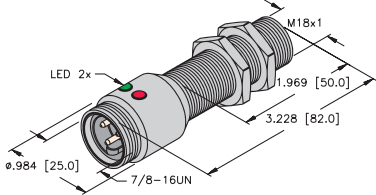
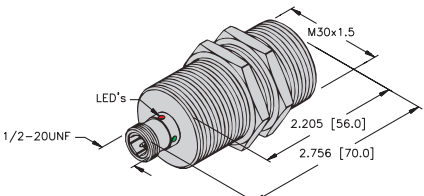
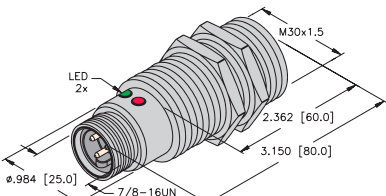
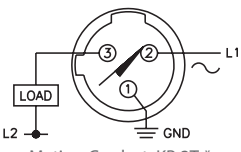
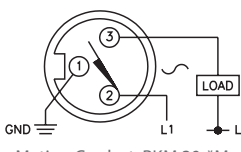
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BI15-EMT30H-AP6X-H1141 4618570	PTFE	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	1	A2
BI15-EM30H-AN6X-H1141 4618692		15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	2	A2
BI15-EM30H-AP6X-H1141 4618592		15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	1	A2
BI12-MT30H-AD4X-H1144 4417095	PTFE	12	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	TC	SF	N/A	YE	A	3	A3
BI10U-MT30H-AP6X2-H1141 1636220	Uprox, PTFE	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	SF	GN	YE	A	1	A2
BI10U-EM30HE-AP6X2-H1141 1636415	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	SF	GN	YE	B	1	A2

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

Stoneface

# Stoneface | 12, 18, and 30 mm

## Embeddable Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, 1/2" Microfast Connection</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, 1/2" Microfast Connection</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Connection</p>
<p><b>D</b></p>  <p>30 mm - Embeddable, 1/2" Microfast Connection</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Connection</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKM 30-*M</p>
A4 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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

## Stoneface | 12, 18, and 30 mm

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Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>BI4-GT12H-ADZ32X-B3131</b> 4205097	PTFE	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	SF	N/A	RD	A	1	A4
<b>BI2-GT12H-ADZ32X-B3131/S34</b> 4205093	PTFE, WFI	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	SF	N/A	RD	A	1	A4
<b>BI5-GT18H-ADZ30X2-B3331/S34</b> 4255289	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	SF	GN	RD	B	1	A4
<b>BI5-GT18H-ADZ30X2-B1331/S34</b> 4255299	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	SF	GN	RD	C	2	A4
<b>BI10-GT30H-ADZ30X2-B3131/S34</b> 4256094	PTFE, WFI	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	SF	GN	RD	D	1	A4
<b>BI15-EG30H-ADZ30X2-B3131</b> 4207284		15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-25 to +70	IP67	SS	SF	GN	RD	D	1	A4
<b>BI15-EG30H-ADZ30X2-B1131</b> 4207292		15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-25 to +70	IP67	SS	SF	GN	RD	E	2	A4

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