



IND. CONT. EQ.  
 81U2  
 Type 1



### Basic features

Approval/Conformity	CE cULus EAC WEEE
Basic standard	IEC 60947-5-2

### Display/Operation

Function indicator	yes
Power indicator	no

### Electrical connection

Connection	M12x1-Male
Polarity reversal protected	yes
Protection against device mix-ups	no
Short-circuit protection	yes

### Electrical data

Min. operating current $I_m$	5 mA
Operating voltage $U_b$	20...250 VDC/20...250 VAC
Protection class	I
Rated insulation voltage $U_i$	250 V AC
Rated operating current $I_e$	250 mA
Rated operating voltage $U_e$ AC	110 V
Rated short circuit current	100 A
Ready delay $t_v$ max.	10 ms
Residual current $I_r$ max.	1700 $\mu$ A
Switching frequency	400 Hz
Utilization category	AC-140 DC -13
Voltage drop static max.	11 V

### Environmental conditions

Ambient temperature	-25...70 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

### Functional safety

MTTF (40 °C)	245 a
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### Material

Housing material	Brass
Material sensing surface	PA 12
Surface protection	nickel plated

### Mechanical data

Dimension	$\varnothing$ 18 x 70.5 mm
Installation	for flush mounting
Size	M18x1
Tightening torque	35 Nm

### Output/Interface

Switching output	Normally open (NO)
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Inductive Sensors  
**BES 516-211-E5-E-S27**  
Order Code: BES028R

**BALLUFF**

**Range/Distance**

Assured operating distance Sa	4 mm
Hysteresis H max. (% of Sr)	15.0 %
Rated operating distance Sn	5 mm

Real switching distance sr	5 mm
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %
Tolerance Sr	±10 %

**Remarks**

With connector, e.g. BKS-S 28-... total length = switch length +20 mm.

$T_a \geq 25\text{ °C} \dots \leq 70\text{ °C}$ :  $I_e = 250 - 2.2 \times (T_a - 25)$

Flashing LED indicates overload. Once the overload has been eliminated, interrupt operating voltage Vs for approx. 2 sec.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Connector Drawings**



**Wiring Diagrams**

