



Model Number

NBB20-U1-E2-C

Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- 3-wire DC
- 4 LEDs indicator for 360° visibility
- For use in direct- and alternating-field welding systems

Accessories

V1-M20-80

Receptacles, M12/M20; plastic version

MHW 01

Modular mounting bracket

MH 04-2681F

Mounting aid for VariKont, +U1+ and +U9*

Technical Data

General specifications

Switching function	Normally open (NO)
Output type	PNP
Rated operating distance	s_n 20 mm
Installation	flush
Output polarity	DC
Assured operating distance	s_a 0 ... 16.2 mm
Actual operating distance	s_r 18 ... 22 mm typ. 20 mm
Reduction factor r_{Al}	0.33
Reduction factor r_{Cu}	0.31
Reduction factor r_{304}	0.74
Reduction factor r_{Brass}	0.41
Output type	3-wire

Nominal ratings

Operating voltage	U_B 10 ... 30 V DC
Switching frequency	f 0 ... 5 Hz
Hysteresis	H typ. 5 %
Reverse polarity protection	reverse polarity protected
Short-circuit protection	pulsing
Voltage drop	U_d $\leq$ 3 V
Design data	
Operating current	I_L 0 ... 200 mA
Off-state current	I_r 0 ... 0.5 mA
No-load supply current	I_0 $\leq$ 20 mA
Time delay before availability	t_v 300 ms
Constant magnetic field	B 150 mT
Alternating magnetic field	B 150 mT
Operating voltage indicator	LED, green
Switching state indicator	LED, yellow

Functional safety related parameters

MTTF _d	1420 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Ambient conditions

Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
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Mechanical specifications

Connection type	Connector plug M12 x 1, 4-pin
Information for connection	A maximum of two conductors with the same core cross section may be mounted on one terminal connection!
	tightening torque 1.2 Nm + 10 %
Core cross-section	up to 2.5 mm ²
Minimum core cross-section	without wire end ferrule 0.5 mm ² , with connector sleeves 0.34 mm ²
Maximum core cross-section	without wire end ferrule 2.5 mm ² , with connector sleeves 1.5 mm ²
Housing material	PA/metal with epoxy powder coating
Sensing face	PA
Housing base	plastic
Degree of protection	IP68 / IP69K
Mass	225 g
Note	Tightening torque: 1.8 Nm (housing)

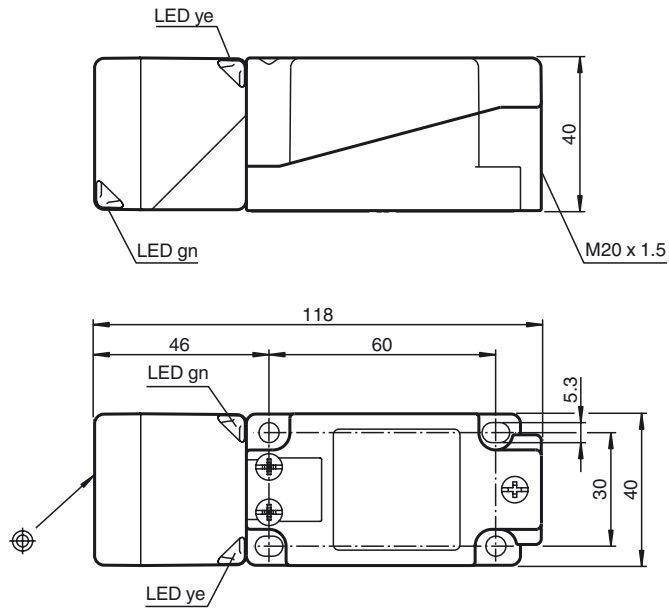
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

Approvals and certificates

UL approval	cULus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq$ 36 V

Dimensions



Electrical Connection

