

1) Teach reference image, 2) Power, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Sharpness

**Characteristic data**

Lens Focal distance 8.0 mm  
 Interface RS232 (9.6...115.2 kBaud)

**Electrical data**

Connection type Connector  
 Operating voltage UB min. DC 22 V  
 Operating voltage UB max. DC 26 V  
 Ripple max. (% of Ue) 10  
 Rated operating voltage Ue DC 24.0 V  
 Effective operating current Ie 100 mA  
 Switching output PNP (2x)  
 Switching function NO  
 No-load current max. I<sub>o</sub> at Ue 200 mA  
 Voltage drop U<sub>d</sub> max. (at I<sub>e</sub>) 1.8 V  
 Supplementary output Trigger output PNP  
 Interface RS232 (9.6...115.2 kBaud)

**Mechanical data**

Design Block, 90° connection  
 Connector type M 12x1, 4 pole, A-coded, M12x1, 4 pole, D-coded  
 Housing material GD-AL, ABS  
 Oberflächenschutz painted  
 Sensing surface material PMMA  
 Working range 50...1000 mm  
 Far working distance W<sub>h</sub> 1000 mm  
 Near working distance W<sub>l</sub> 50 mm  
 Ambient temperature T<sub>a</sub> max. 55 °C  
 Ambient temperature T<sub>a</sub> min. -10 °C  
 Mounting type Screw M4

**Optical data**

Principle of optical operation CMOS image sensor black-white  
 Light type LED, infrared  
 Wavelength 870 nm  
 Optical special feature Infrared pass filter

LED group per IEC 62471  
 Field of view max.  
 Field of view min.  
 Image resolution max.  
 Lens  
 Detection rate typ.

Exempt group  
 480 x 360 mm  
 24 x 18 mm  
 VGA 640 x 480 Pixel  
 Focal distance 8.0 mm  
 3...40 Hz

**Basic data**

Basic standard EN 62471:2008  
 Enclosure Type per IEC 60529 IEC 60947-5-2  
 Short-circuit protected IP54  
 Protected against polarity reversal yes  
 Series Series Universal  
 Indicator Connection with PC - LED GN  
 Duration of time function Impulse 1...1000 ms or infinite/Delay 0...1000 ms  
 Input function Trigger  
 Setting Image sharpness, Teach-in reference image  
 Adjuster Adjusting ring (1x)/Key (1x)  
 Number of inspections max. 20  
 No. of charac. per inspec. max. 255  
 Approvals CE, cULus

**Remarks**

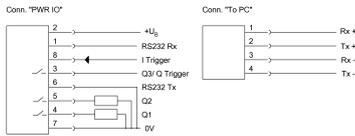
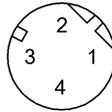
Use of external illumination recommended for working distances greater than 300 mm .  
 Detection rate is dependent on the evaluation function.  
 Only for NFPA 79 applications (machines with a supply voltage of maximum 600 volts). Appropriate connectors can be obtained from Balluff.  
 When not in use, protect interface plug from penetration by dust and liquids.  
 Protective cap is included in the scope of delivery.  
 For additional information, refer to user's guide.  
 Order accessories separately.  
 Do not press key using a pointed tool.

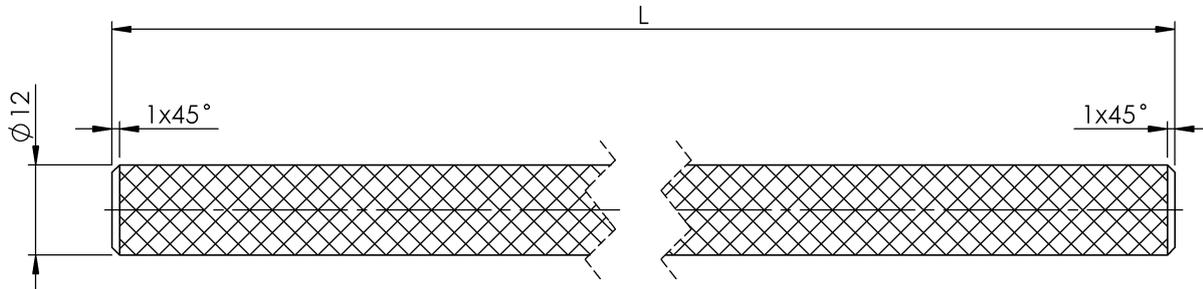
**BVS UR-3-101-E**  
**Ordering code: BVS001H**

Vision sensor

**BVS-E Universal**  
**PNP (2x)**

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**Mechanical data**

Diameter d1	Ø12.0 mm
Length 2	150 mm
Housing material	Aluminum
Oberflächenschutz	Anodized
Mounting type	Clamping
Design	Supporting rod

Type of mounting

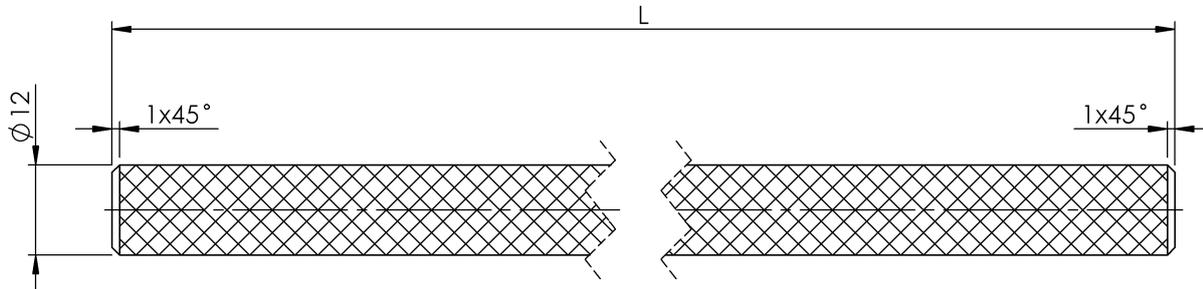
Mounting system

**Basic data**

Usage  
Scope of delivery

Rod used with BMS Ø12 mm  
Mounting rod (1x)

**Remarks**



**Mechanical data**

Diameter d1	Ø12.0 mm
Length 2	250 mm
Housing material	Aluminum
Oberflächenschutz	Anodized
Mounting type	Clamping
Design	Supporting rod

Type of mounting

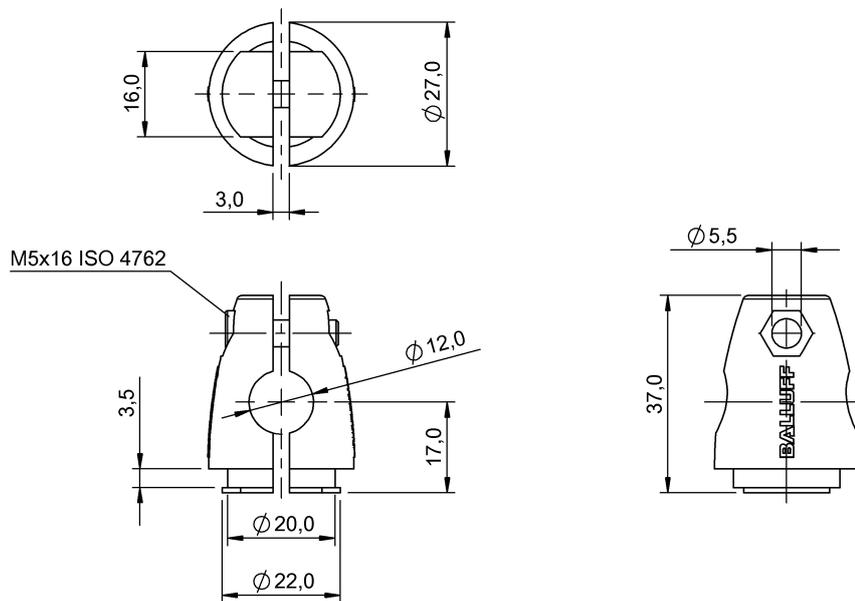
Mounting system

**Basic data**

Usage  
Scope of delivery

Rod used with BMS Ø12 mm  
Mounting rod (1x)

**Remarks**



**Mechanical data**

Diameter d1	Ø27.0 mm
Length 2	37 mm
Housing material	V2A
Mounting type	Ø20
Design	Clamping cylinder

**Basic data**

Usage	Mounting sensor holders
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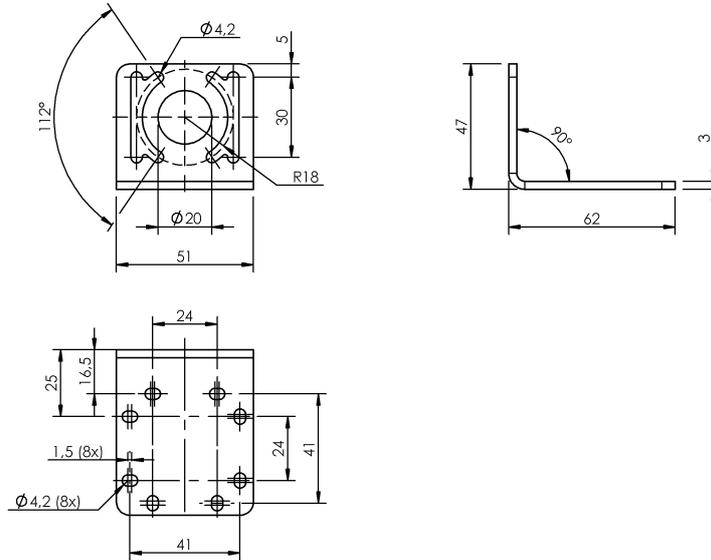
**Remarks**

**BVS Z-MB-01**  
Ordering code: **BAM00WN**

Mechanical Accessories

Mounting system

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**Mechanical data**

Length 1 62,0 mm  
Length 2 51 mm  
Length 3 47 mm  
Housing material V4A  
Material V4A (1.4571)  
Mounting type Ø20, basic holder  
Screws

Design  
Type of mounting

Mounting bracket  
Basic holder, mounting system

**Basic data**

Series  
Usage

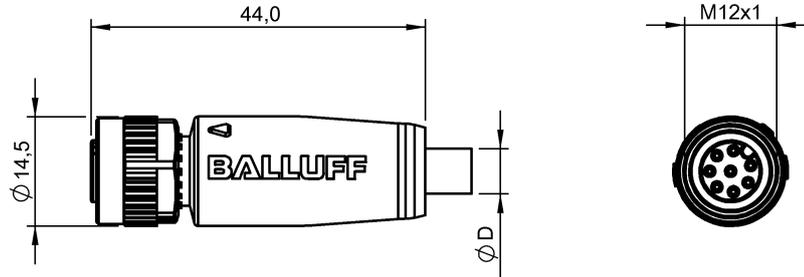
MB-XA  
Use with BVS sensors

**Remarks**

**BCC M418-0000-1A-046-PS0825-020**  
**Ordering code: BCC0994**

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**Connector**  
**M12x1**



**Characteristic data**

Number of conductors	8
Connector style (Head I)	Plug M12
Design	straight
System	molded
Special properties	Drag chain compatible
Power indicator	No
Function indicator (PIN 2)	No
Function indicator (PIN 4)	No
Cable jacket colour	black
Switching output	No

**Electrical data**

Operating voltage UB max. AC	60 V
Operating voltage UB max. DC	60 V
Rated current (40 °C)	4.0 A

**Mechanical data**

Number of sockets or pins	8
Cable length	2 m
Conductor cross-section	0.25 mm <sup>2</sup>
Cable diameter D	6.0 +/- 0.15 mm
Drag chain compatible	
Acceleration max. (drag chain)	5 m/s <sup>2</sup>
Bending radius fixed cable	min. 5 x D

Bending radius repeated	min. 10 x D
Bending cycles (in million)	> 2 Mio.
Permiss. horizon. traverse dist.	at 5 m/sec <sup>2</sup> 5 m
Traverse speed max (drag chain)	at 5 m horiz. travel 200 m/min
Permiss. vert. traverse dist.	at 5 m/sec <sup>2</sup> 2 m
Ambient temperature (fixed)	-50...80 °C
Ambient temperature (movable)	-25...80 °C
Ambient temperature (dragchain)	-25...60 °C
Grip material	PUR
Cover nut material	GD-Zn
Cable jacket material	PUR shielded
Contact carrier material	PUR
Contact material	CuZn
Tightening torque pigtail	0.6 Nm

**Basic data**

Enclosure Type per IEC 60529	IP67
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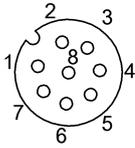
**Remarks**

Enclosure type accord. to IEC 60529, when threaded together with the appropriate counterpart.  
 Flame resistant per UL FT2  
 Halogen-free per DIN VDE 0472 Part 815  
 Cable structure according to UL-AWM Style 20549

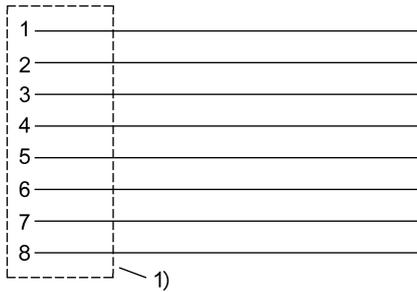
**BCC M418-0000-1A-046-PS0825-020**  
**Ordering code: BCC0994**

**Connector**  
**M12x1**

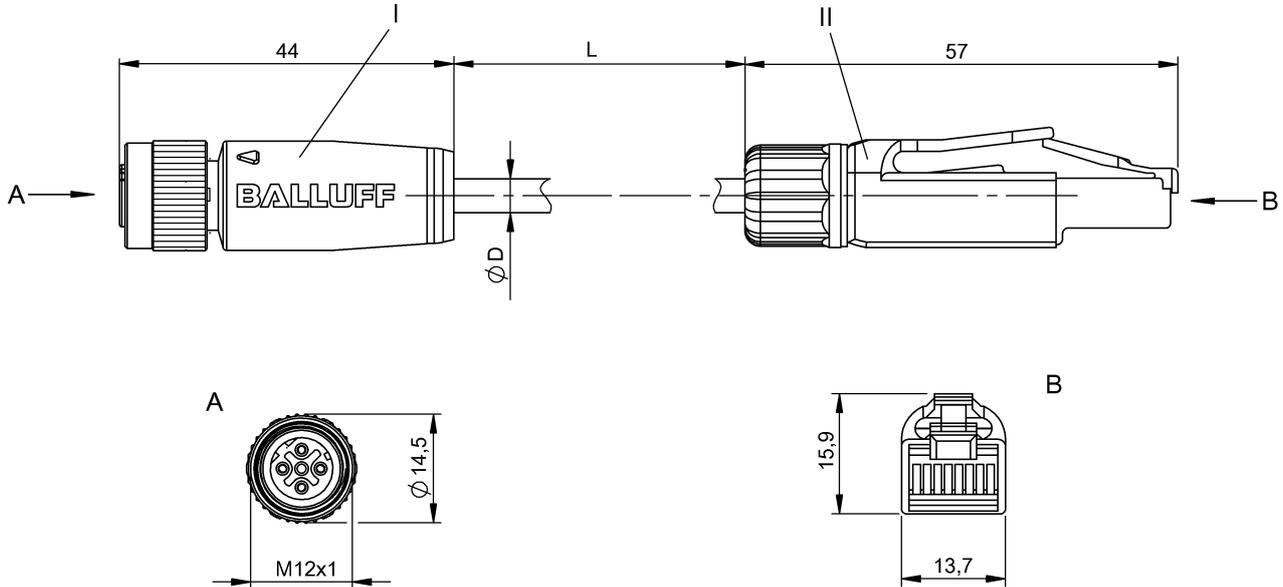
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PIN 1: white, PIN 2: brown, PIN 3: green, PIN 4:  
yellow, PIN 5: gray, PIN 6: pink, PIN 7: blue, PIN 8:  
red



1) Shielded knurl



**Characteristic data**

Number of conductors	4
Connector style (Head I)	Plug M12
Connector type (Head II)	Connector RJ45
System	molded / assembled
Cable jacket colour	teal
Switching output	No

**Electrical data**

Operating voltage UB max. AC	60 V
Operating voltage UB max. DC	60 V

**Mechanical data**

Number of sockets or pins	5 / 8
Conductor cross-section	AWG 24
Cable diameter D	6.35 +/- 0.25 mm
Stranding	Twisted pair

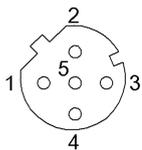
Cable temperature max.	80 °C
Grip material	PUR / PA6.6
Cover nut material	GD-Zn / -
Cable jacket material	TPE shielded
Contact carrier material	PUR / PA6.6
Contact material	CuZn / CuSn
Tightening torque pigtail	0.6 Nm / -

**Basic data**

Enclosure Type per IEC 60529	IP67 / IP20
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**Remarks**

Enclosure type accord. to IEC 60529, when threaded together with the appropriate counterpart.  
Cable structure according to UL-AWM Style 20626  
Halogen-free

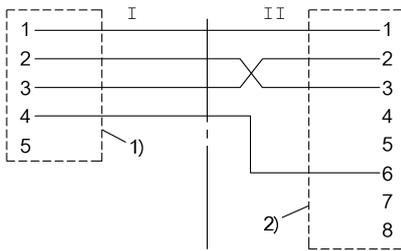


**BCC M415-E834-AG-672-ES64N8-015**  
**Ordering code: BCC0E7P**

**Connecting line**  
**M12x1 / RJ45**

**Industrial ETHERNET**

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- 1) Shielded knurl
- 2) Shield on housing