

# Photoelectrics Through-beam Type MN

CARLO GAVAZZI



- Range: 5 m
- Easy alignment
- Modulated infrared light
- Rated operational voltage: 10 to 30 VDC
- Output: 200 mA, NPN or PNP
- Make or break switching
- Protection: Reverse polarity, transients
- 2 m PVC cable, oil proof
- Ø 20 mm polycarbonate housing
- 100% waterproof, for harsh environment, IP 66/IP 67

## Product Description

Self contained through-beam photoelectric switch. Range up to 5 m. Easy alignment through wide angle beam. DC transistor output. Ø 20 x 86 mm

black polycarbonate housing. 2 optical axes: straight or 90° angle, 2 m PVC cable. Waterproof.

## Ordering Key

**MNR 05 NNO**

Type \_\_\_\_\_  
 Function \_\_\_\_\_  
 Range \_\_\_\_\_  
 Output type \_\_\_\_\_

## Type Selection

Housing diameter Optical axis Rated operating dist. (S <sub>n</sub> )	Ordering no. Emitter	Ordering no. Receiver NPN/cable Make switching	Ordering no. Receiver NPN/cable Break switching	Ordering no. Receiver PNP/cable Make switching	Ordering no. Receiver PNP/cable Break switching
Ø 20 90° angle 5 m	MNT 05	MNR 05 NNO	MNR 05 NNC	MNR 05 PNO	MNR 05 PNC

**Note:** Please order emitter and receiver separately

## Specifications Emitter

Rated operational volt. (U <sub>B</sub> )	10 to 30 VDC (ripple included)
Ripple (U <sub>rip</sub> )	≤ 20%
Supply current (I <sub>o</sub> )	≤ 12 mA
Protection	Reverse polarity, transients
Light source	GaAIAs LED, 880 nm
Light type	Infrared, modulated
Optical angle	±7.5°
Indications	None

## Specifications Receiver

Rated operational volt. (U <sub>B</sub> )	10 to 30 VDC (ripple included)
Ripple (U <sub>rip</sub> )	≤ 20%
No load supply current (I <sub>o</sub> )	≤ 10 mA
OFF-state current (I <sub>r</sub> )	≤ 100 µA
Output current Continuous (I <sub>e</sub> )	200 mA
Voltage drop (U <sub>d</sub> )	≤ 1 VDC
Protection	Reverse polarity, transients
Sensitivity	Fixed
Optical angle	±8°
Ambient light	Max 10,000 lux
Operating frequency (f)	100 Hz, light/dark ratio 1:2
Response time OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	≤ 6.6 ms ≤ 3.3 ms
Power ON delay (t <sub>v</sub> )	Typ. 70 ms
Indications	None



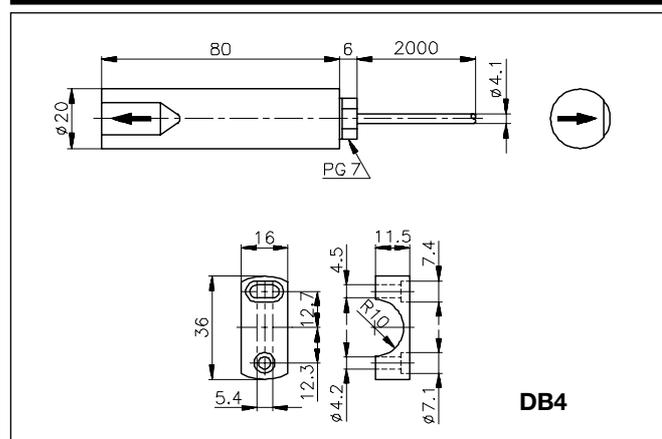
## General Specifications

<b>Environment</b>	
Overvoltage category	III (IEC 60664/664A; 60947-1)
Pollution degree	3 (IEC 60664/664A; 60947-1)
Degree of protection	IP 66/IP 67(IEC 60529; 60947-1)
<b>Temperature</b>	
Operating	-20° to +60°C (-4° to +140°F)
Storage	-40° to +80°C (-40° to +176°F)
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
<b>Dielectric voltage</b>	500 VAC (rms)
<b>Housing material</b>	
Body	Polycarbonate, black
Front	Polycarbonate, black
Back	Polycarbonate, black
Mounting bracket DB4	Polycarbonate, black
<b>Connection cable</b>	
Emitter	Grey, 2 m oilproof PVC, 2 x 0.25 mm <sup>2</sup>
Receiver	Black, 2 m oilproof PVC, 3 x 0.25 mm <sup>2</sup>
<b>Weight (cable incl.)</b>	95 g

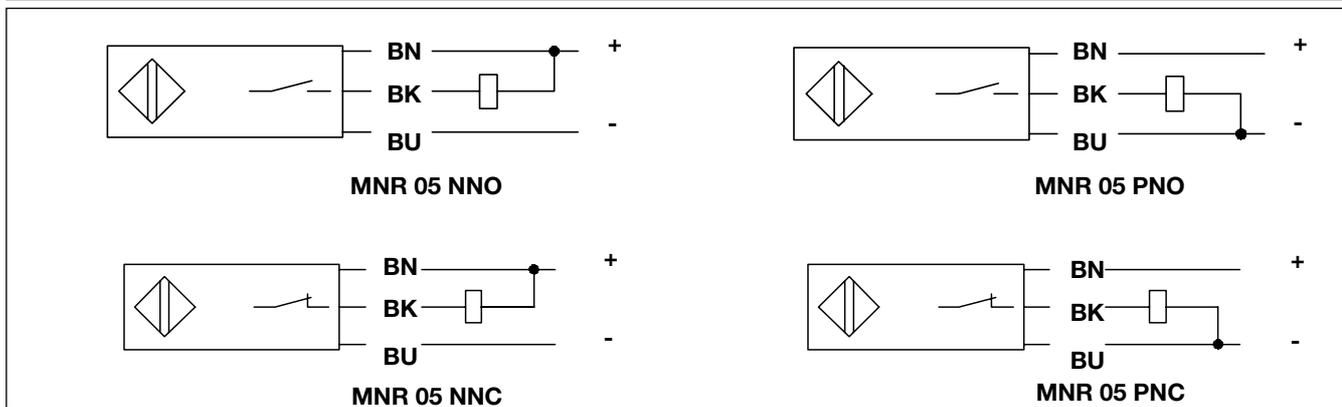
## Truth Table

	Make switching		Break switching	
	Yes	No	Yes	No
Object present	Yes	No	Yes	No
Load	Non-active	Active	Active	Non-active
Output NPN	High	Low	Low	High
Output PNP	Low	High	High	Low

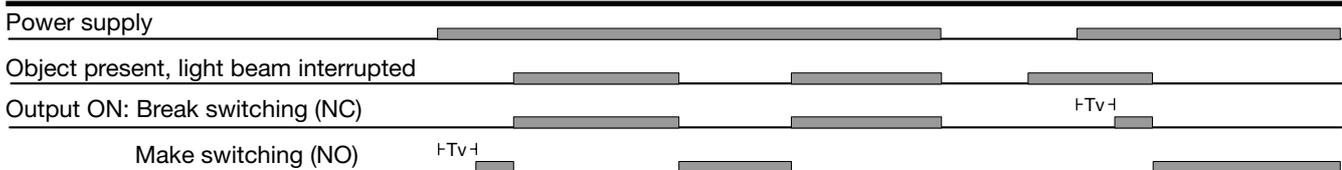
## Dimensions



## Wiring Diagrams



## Operation Diagram



## Delivery Contents

- Photoelectric switch: MNT.. or MNR
- Mounting bracket DB4
- **Packaging:** Emitter and receiver packed separately