

Photoelectrics Retro-reflective Type ER 1830

CARLO GAVAZZI



- Range: 3 m
- Adjustable sensitivity
- Modulated infrared light
- Rated operational voltage: 10 to 40 VDC or 20 to 250 VAC
- Output: DC 200 mA NPN or PNP, AC 500 mA SCR
- Make and break switching function
- LED output indication
- Operating frequency 120 Hz (DC), 20 Hz (AC)
- High immunity to ambient light
- Heavy duty M1 8 metal housing, IP 67
- Cable and plug versions



Product Description

Retro-reflective photoelectric switch with extended range up to 3 m. Easily adjustable sensitivity with 270° potentiometer. LED output indication.

Short M 18 metal housing for heavy duty applications. IP 67. Easy mounting. DC and AC types, fully protected.

Ordering Key **ER 18 30 NPA S-1**

Type	_____
Housing diameter	_____
Range	_____
Output type	_____
Housing material	_____
Connection type	_____

Type Selection - DC Types

Housing diameter	Rated operating dist. (S _n)	Ordering no. NPN/cable Make & break swit.	Ordering no. NPN/plug Make & break swit.	Ordering no. PNP/cable Make & break swit.	Ordering no. PNP/plug Make & break swit.
M 18	3 m	ER 1830 NPAS	ER 1830 NPAS-1	ER 1830 PPAS	ER 1830 PPAS-1

Type Selection - AC Types

Housing diameter	Rated operating dist. (S _n)	Ordering no. SCR/cable Make switching	Ordering no. SCR/plug Make switching	Ordering no. SCR/cable Break switching	Ordering no. SCR/plug Break switching
M 18	3 m	ER 1830 TBOS	ER 1830 TBOS-3	ER 1830 TBCS	ER 1830 TBCS-3

Note: Plugs and reflector to be ordered separately

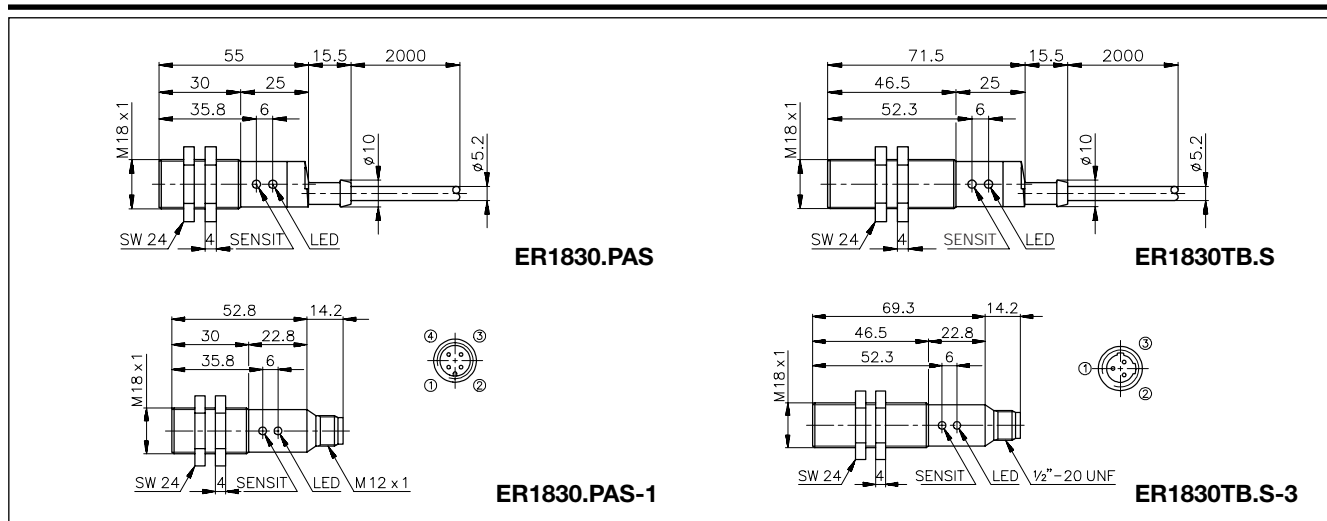
Specifications

	Transistor NPN/PNP	SCR output AC types
Rated operating dist. (S _n)	3 m with reflect. target ER4, Ø 84 mm	3 m with reflect. target ER4, Ø 84 mm
Temperature drift	0.4%/K	0.4%/K
Rated operational volt. (U _B)	10 to 40 VDC (ripple included)	20 to 250 VAC, 45 to 65 Hz (AC12, AC140)
Ripple (U _{rip})	≤ 10%	
Output current		
Continuous (I _o)	≤ 200 mA	≤ 500 mA (AC12)
Short-time (I)	200 mA, max. load capacity 100 nF	≤ 3 A, max. 20 ms (AC140)
No load supply current (I _o)	≤ 20 mA,	
Min. operational current (I _m)	0.5 mA	10 mA (AC 12)
OFF-state current (I _s)	Max. 100 µA	< 5 mA, typ. 2.6 mA (AC 12)
Voltage drop (U _d)	≤ 2.5 V	≤ 10 VAC, typ. 7 VAC
Protection	Reverse polarity, short circuit, overload, transients	Transients

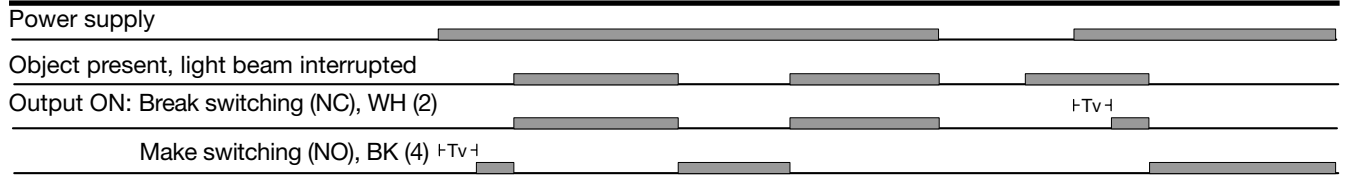
Specifications (cont.)

	Transistor NPN/PNP	SCR output AC types
Transient voltage	1 kV/0.5 J	1 kV/0.5 J
Sensitivity	Adjustable, single turn potentiometer, 270°	Adjustable, single turn potentiometer, 270°
Light source	GaAlAs LED, 880 nm	GaAlAs LED, 880 nm
Light type	Infrared, modulated	Infrared, modulated
Optical angle	±2.2°	±2.2°
Light spot size	150 mm at 2 m	150 mm at 2 m
Ambient light	Max. 10,000 lux	Max. 10,000 lux
Operating frequency (f)	120 Hz, light/dark ratio 1:2	Max. 20 Hz, light/dark ratio 1:2
Response time		
OFF-ON (t _{ON})	≤ 3.2 ms	≤ 20 ms
ON-OFF (t _{OFF})	≤ 5 ms	≤ 30 ms
Power ON delay (t_p)	Typ. 100 ms	Typ. 100 ms
Indication		
Output ON	LED, yellow	LED, yellow
Environment		
Overvoltage category	III (IEC 664/664A; 947-1)	III (IEC 664/664A; 947-1)
Pollution degree	3 (IEC 664/664A; 947-1)	3 (IEC 664/664A; 947-1)
Degree of protection	IP 67 (IEC 529; 947-1)	IP 67 (IEC 529; 947-1)
Temperature		
Operating	-20° to +60°C (-4° to 140°F)	-20° to +60°C (-4° to 140°F)
Storage	-30° to +70°C (-22° to 158°F)	-30° to +70°C (-22° to 158°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 68-2-32)	2 x 1 m 100 x 0.5 m (IEC 68-2-32)
Dielectric voltage	500 VAC (rms)	1500 VAC (rms)
Housing material		
Body	Nickel-plated brass	Nickel-plated brass
Front	Luran, black	Luran, black
Cable end	Polyester, black	Polyester, black
Nuts	Nickel-plated brass	Nickel-plated brass
Connection		
Cable	Grey, 2 m, 4 x 0.35 mm ² , oilproof PVC Note: Other cable lengths on request CONH1A-.. serie	Grey, 2 m, 2 x 0.5 mm ² , oilproof PVC Note: Other cable lengths on request CONH3A-.. serie
Plug		
Weight	140 g cable version 55 g plug version	150 g cable version 65 g plug version

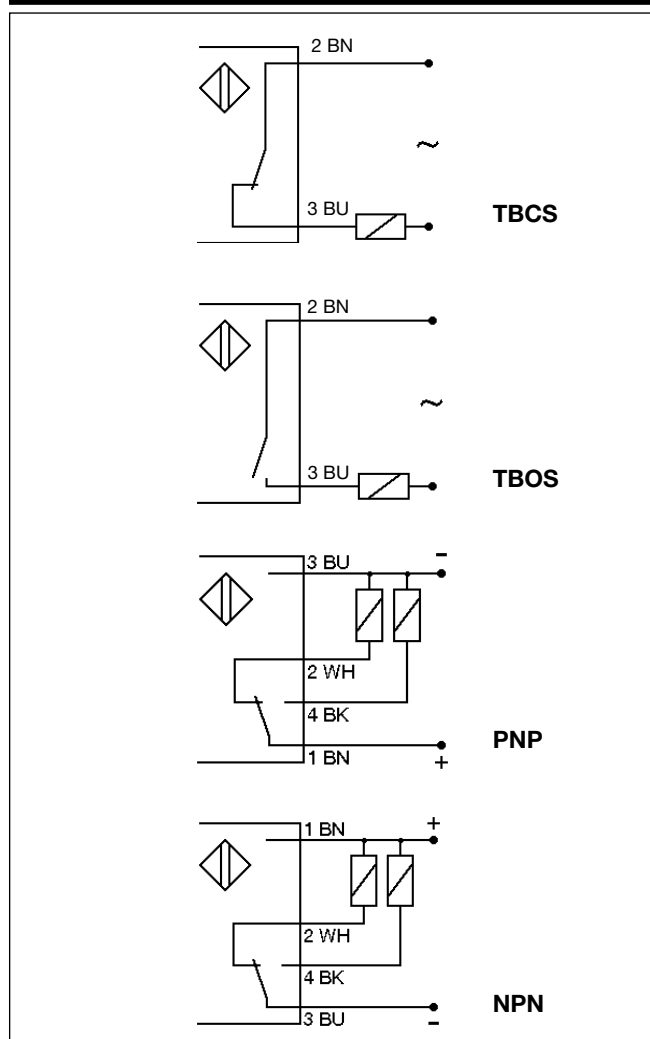
Dimensions



Operation Diagram



Wiring Diagrams



Truth Table

	Make switching		Break switching	
	Yes	No	Yes	No
Object present	Yes	No	Yes	No
DC types				
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active
Output NPN	High	Low	Low	High
Output PNP	Low	High	High	Low
AC types				
LED	OFF	ON	ON	OFF
Load	Non-active	Active	Active	Non-active

Accessories

- Reflectors: ER series
- Plugs DC versions: CONH1A-.. serie
- Plugs AC versions: CONH3A-.. serie
- Screw driver for adjustments: 77-000
- Option: Fibre-optics

For further information refer to "Accessories"

Delivery Contents

- Photoelectric switch: ER 1830....
- 2 nuts
- **Packaging:** plastic bag