



# FC4 series

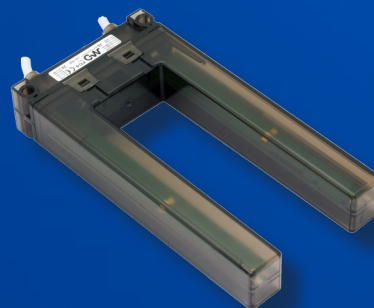
Four beams fork sensor for belt tracking control



Four beams slot sensor

## features

- Four beams photoelectric fork sensor for belt tracking control
- Double static outputs + alarm contact
- Approvals: CE



## web contents



- Application notes
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## ordering system

description	model
Two pig-tail, male M12 connectors, 4 pins, cable length 600 mm	FC4/V-00
Two co-axial cables, 4 pins, cable length 2,000 mm	FC4/A-00

## plug



J1 plug			
pin	colour	function	description
1	brown	24 Vdc power input	power supply and common positive for loads
2	white	belt tracking output NC	PNP NC output with short circuit protection
3	blue	0 Vdc power input	power and output return
4	black	belt tracking output NO	PNP NO output with short circuit protection
J2 plug			
pin	colour	function	description
1	brown	not connected	can be used as input
2	white	alarm output A	pin a1 of alarm output contact
3	blue	not connected	power and output return
4	black	alarm output A	pin a2 of alarm output contact



## technical specification

according to IEC EN 60947-5-2

Four beams  
slot sensor

parameters	minimum	typical	maximum
sensitivity <sup>(1)</sup>	-	1 sheet of 80 g/m <sup>2</sup> white paper	-
wave length	-	880 nm	-
light beam diameter (maximum obstacle diameter)	-	-	3 mm
aperture angle	± 15°		
oscillation hysteresis	7 mm		
optical power class	1 (no danger)		
ambien light rejection	10,000 lux, artificial light		
power supply voltage <sup>(2) (3)</sup>	10 Vdc	24 Vdc	30 Vdc
ripple <sup>(4)</sup>	≤ 5 Vpp		
supply current <sup>(5)</sup>	30 mA	-	70 mA
output A (alarm) <sup>(6)</sup>	electromechanical contact, 1 A, 30 VDC, no short circuit protection		
outputs ONC and ONO (belt tracking control)	two complementary PNP outputs class DC13 (inductive load protection) short circuit and overload protection		
output current	-	200 mA	300 mA
short-circuit protection	430 mA @ 25°C		
voltage drop	-	-	2,5 V @ 100 mA
leakage current	-	≤ 10 µA	-
maximum load current	5 µF		
sampling period <sup>(7)</sup>	4 ms		
scan duration of the four beams <sup>(8)</sup>	600 µs		
output ONC and ONC response times	4,7 ms		
maximum output switching frequency	70 Hz with 1/2 dark/light	-	100 Hz with 1/1 dark/light
output A contact response time	-	-	8 ms (open); 500 ms (close)
time delay before availability <sup>(9)</sup>	-	-	700 ms
test input levels (provision only, not connected)	LO ≤ 5 V (or open), HI * 15 V according to IEC 61131-2 (2007)		
VDE protection class	III (max. voltage 50 VAC), 500 V insulation		
index of protection	IP67		
shock resistance IEC 60068-2-27	3 axes x 6, Half sine, Acc.: 30gn, Dur.: 11 ms		
vibration resistance IEC 60068-2-6	freq.: 10...55 Hz, Amp.: 0.5 mm, Sweep: 5 min. Fr: 3 x 30 min		
EMC	in conformity with the EMC Directive according to EN 60947-5-2		
operating temperature range	-	-20 °C ...+55 °C	-
storage temperature	-	-40 °C ...+75 °C	-
humidity	15 %	-	95 %
weight	200 g		
connections	4 pins, see TABLE 1, models, TABLE 4 and TABLE 5		
housing material	PC		
cable materials	PVC		

- (1) Dark state detection, valid for all beams individually.
- (2) We recommend use of an external power supply to compensate for transient mains failures of up to 20 ms according to EN 60204.
- (3) We recommend use an external power supply with max. 1 A short circuit protection.
- (4) Must not exceed the max. or min. limits of the operating voltage range.
- (5) Excluding loads; valid for entire power supply voltage range.
- (6) Minimum load: 10m VDC, 0.01 mA. Mechanical life: 50x106 oper. min. (at 3 Hz). Electrical life: 100 x 103 oper. min. at 1 A 3 0VDC (at 0.5 Hz)
- (7) Duration of two read cycles with integration.
- (8) Scan interval between beams is 200  $\mu$ s.
- (9) Time taken, after power on, for outputs to switch from OFF to the state corresponding to the beam state.

## dimensions (mm)

FC4/\*\*-\*\*

