

## CONTROL UNIT/DEVICE TO CONTROL MATS EDGES AND SHOCK ABSORBERS

The control unit is a device to control the function of a sensor (mat, edge or shock absorber) by blade contacts.

The blade contact is a NO contact that closes, causing the opening of the outlet contact of the control unit.

The control unit controls the operation of the sensor and the connection circuit, and allows to

transform the NO signal of the blade contact into a NC safety signal.

A control device can control several sensors, but cannot perform the auto-diagnose indicating which sensor is faulty. If more sensors are used, use a control unit every 3-4 sensors.

### MODELS AVAILABLE:

GP02/E

GP02R.T – GP02R.T1

GP02R and GP02R-C Only for edges with electrical resistance 8,2kΩ

### CONTROL UNIT

#### Description

Emergency stop circuit, used to manage and control a sensor, having two safety relays terminals with forced opening contacts.

The two relays, normally excited, are deenergized in the following conditions:

- No supply
- Operation of mat, edge, shock absorber.
- Internal faults
- Interruption of the internal circuit of mat, edge, shock absorber or connection cables between control unit and sensor (mat, edge, shock absorber).

The devices are supplied with **automatic reset** but they can be transformed into **manual reset**.

If a control unit is used **without rearming** the function must be supplied by the control system of the machine (see std. EN 13849-1).

#### Operation

Two separate channels detect the voltage at the end of the safety terminals of the mat, and each channel commutes a safety relay with forced opening contacts.

#### Models GP02/E- GP02R.T(automatic restart)- GP02R.T1(manual restart)

The supply voltage is limited by a specific group and the pilot circuit, to avoid short circuit currents while closing the sensor (mat, edge, shock absorber). The control unit controls itself, as well as any other operation.

Inlet terminals are foreseen for:





- Test signal activating/deactivating the circuit of the control device simulating the operation of the sensor and checking the system efficiency.
- Signal of manual reset/ feedback-action.

The two modules are differentiated by the number of outlet contacts: model GP02/E has a NO safety contact, whereas model GP02/E-S2 and GP02R.T has two NO safety contacts.

#### Model GP02R and GP02R-C only for edges with electrical resistance 8,2kΩ

Two symmetric circuits detect the current in the edge, adjusted for a resistance of 8,2 kΩ. When the circuits detect a variation of  $\pm 4$  kΩ, caused by a fault or operation of the edge, they desexcite the outlet relays, that open the safety contacts.

## TECHNICAL FEATURES

Reference Standards: EN ISO13849-1, EN1760-EN60947-5-1 EN 50205 (type A)	TYPE GP02/E 	TYPE GP02R.T 	TYPE GP02R 8,2kΩ 	TYPE GP02R-C 8,2kΩ 
PL	e			
Category	3			
PFH (1/h)	4,29*10 <sup>-8</sup>			
No. of operations/year	35000	50000	5000	5000
Usage categories	DC13(24) – 1,5 A AC1(230) – 3A	AC15(230) – 1,2 A	AC15(230) -4 A	AC15(230) – 3A DC13(24) – 3A
Mission time [years]	20			
<b>Electrical data</b>				
Supply voltage	24 VDC ± 10%			
Current consumption with mat activated (24VDC)	15 mA			
Current consumption with reset module 24VDC)	90 mA			
Internal protection of power supply	YES (1 A)			
<b>Inputs</b>				
Input short-circuit detection	YES			
Input connection interruption detection	YES			
Max length of connection cables	100 m			
Min section of connection cables	0,35 mm <sup>2</sup> (1mm <sup>2</sup> L>20m)			
Max resistance of sensor	100 ohm	40 ohm		
Voltage applied to inputs	24 VDC			
Max current (peak value)	200 mA			
<b>Safety outputs</b>				
Number of safety outputs	1 NO	2 NO		
Rated voltage/Max switchable voltage VAC	250/400	230/300		
Rated current	6 A	AC15 230 VAC 1,5A DC13 24VDC 1,2 A		
Material of standard contacts	AgNi	AgSnO <sub>2</sub>		
Rated supply voltage	V AC50/60hz	-		
	V DC	24		
Rated power AC/DC VA (50 Hz)/W	-/0,7	-/0,25		
Delay to energizing (reset)	25 ms (typical)	12 ms		
Delay to de-energizing (trip)	10 ms (typical)	13 ms		
Protection against over-current	4 A quick-action/2 A delayed			
Mechanical life	10 <sup>6</sup>	10 <sup>7</sup>		
<b>Signal outputs</b>				
Number of signal outputs	1			
Max operating voltage	VAC	125		
	VDC	30		
Max current 110VAC	0,2A			
Max current 24VDC	0,5A			
<b>Environmental characteristics</b>				
Operating temperature [°C]	0 / 55	-25 /+50		
Storage temperature [°C]	-20 /+70	-25 /+70		
Max relative humidity	85%			
Degree of protection of terminals	IP20			
Degree of protection of casing	IP30		IP65	
<b>Dimensions</b>				
Width [mm]	35	22,5	120	
Height [mm]	90	114	75	
Depth [mm]	70	99	155	
Weight [g]	150	140	410	
Material of the casing	ABS	PA66-FR	GW PLAST 75	
Installation	ON 35 mm Omega rail			
EC-TYPE CERTIFICATION	RP10DM4SA113	RP11DM4SC12	RP10M4SA107	