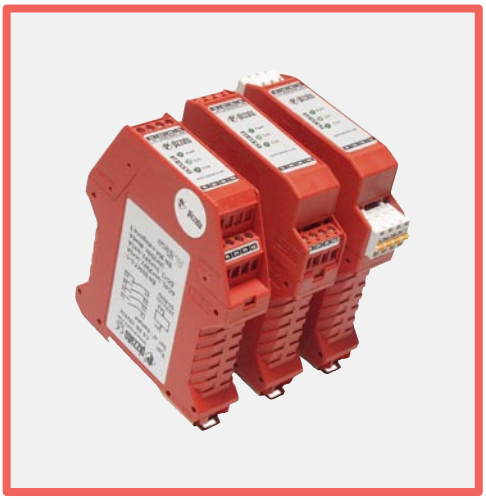


Module for emergency stop and gate monitoring

Main functions
- Single or dual channel input circuit
- Choice between automatic start, manual start (CS AR-22 only) or monitored start (CS AR-23 only)
- Connection of the input channels to opposite potentials
- Small 22,5 mm housing
- 3 NO safety contacts, 1 NC auxiliary contact
- Supply voltages: 24 VAC/DC

Utilization categories
Alternate current: AC15 (50...60 Hz)
Ue (V) 230
Ie (A) 3
Direct current: DC13 (6 operations/minute)
Ue (V) 24
Ie (A) 6

Markings, quality marks and certificates:

Approval UL: E131787

Complying with the requirements requested by:
Low Voltage Directive 2006/95/EC,
Machinery Directive 2006/42/EC,
Electromagnetic Compatibility 2004/108/EC

Technical data

Housing

Made of polyamide PA 6.6 self-extinguishing, class V0 (UL94)	
Protection degree:	IP40 (housing), IP20 (terminals)
Dimensions:	see page 4/141, shape A

General data

Safety category:	category 3 according to EN 954-1
Ambient temperature:	-25°C...+55°C
Mechanical endurance:	>10 millions of operations
Electrical endurance:	>100.000 operations
Pollution degree:	outside 3, inside 2
Rated impulse with stand voltage (Uimp):	4 KV
Rated insulation voltage (Ui):	250 V
Over-voltage category:	III
Weight:	0,2 Kg

Power supply

Rated operating voltage (Un):	24 VAC/DC; 50...60 Hz
Max residual ripple in DC:	10%
Supply voltage tolerance:	±15% of Un
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W

Control circuit

Protection against short circuits:	resistance PTC, Ih=0,5 A
Operating time of PTC:	intervention > 100 ms, reset > 3 s
Max input resistance:	≤ 50 Ω
Current for each input:	70 mA
Min. period of start impulse t_{MIN}:	100 ms
Operating time t_A:	50 ms
Releasing time in absence of power supply t_R:	60 ms
Simultaneity time t_C:	infinite

In conformity with standards:
IEC 60947-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN ISO 13849-1, EN 999, EN 1037, EN ISO 12100-1, EN ISO 12100-2, EN ISO 13850, IEC 529, EN 60529, EN 61000-6-2, EN 61000-6-3, EN 62326-1, EN 60664-1, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:	3 NO safety contacts, 1 NC auxiliary contact
Contacts type:	forced guided contacts
Contacts material:	silver alloy, gold plated
Max switching voltage:	230/240 VAC; 300 VDC
Max switching current per contact:	6 A
Conventional free air thermal current Ith:	6 A
Contacts resistance:	≤ 100 mΩ
Contact protection fuse:	6 A
The number and the load capacity of output contacts can be increased by using expansion modules or contactors:	see page 4/135 - 4/139

Code structure

CS AR-22V024

Kind of start

22	manual or automatic start
23	monitored start

Kind of connection

V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage

024	24 VAC/DC	±15%

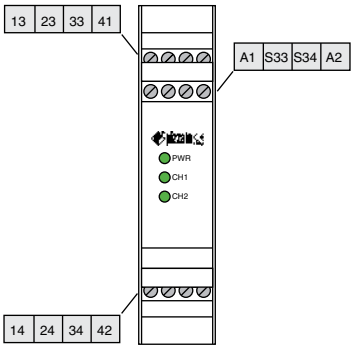
Data type approved by UL

Rated operating voltage (Un):	24 VAC/DC; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W
Max switching voltage:	230 VAC
Max switching current per contact:	6 A
Utilization category	C300

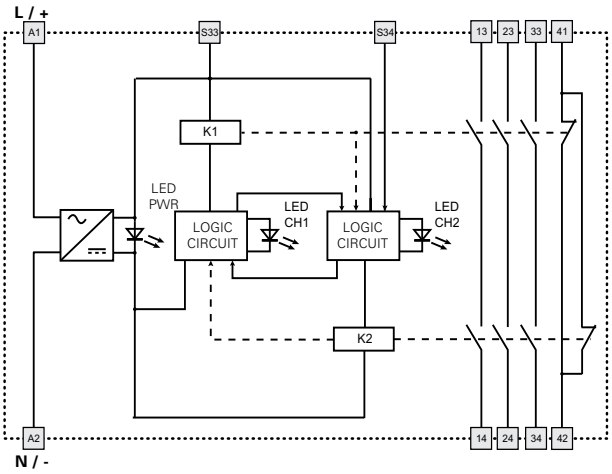
Notes:
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.
- Terminal tightening torque of 5-7 Lb-In.
- Only for 24 VAC/DC version, supply from remote class 2 source or limited voltage and limited energy.

Safety module CS AR-22 / CS AR-23

Terminals layout

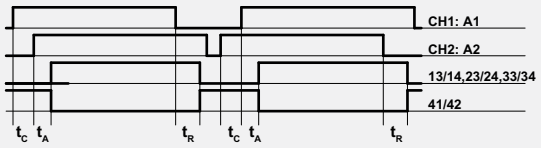


Internal wiring diagram

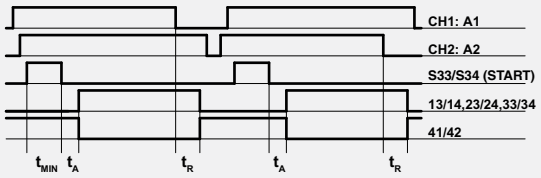


Operation diagrams

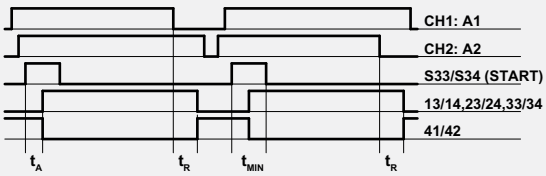
Configuration with automatic start (CS AR-22 only)



Configuration with monitored start (CS AR-23 only)



Configuration with manual start (CS AR-22 only)



Legend:

t_{MIN}: Min. period of start impulse
t_C: Simultaneity time
t_A: Operating time
t_R: Releasing time in absence of power supply

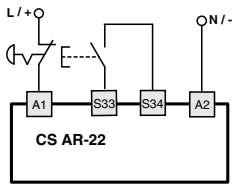
Note:
The configurations with one channel are obtained taking into consideration only the CH1:A1 input. In this case it is necessary to consider the t_R referred to CH1: A1 input , the t_A time referred to CH1:A1 input and to the start, and the t_{MIN} time referred to the start.

Inputs configuration

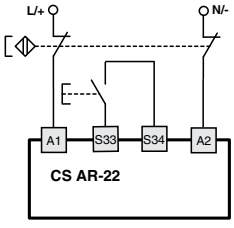
Emergency stop

Input configuration with manual start

1 channel



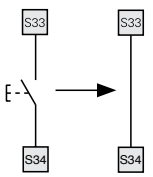
2 channels



The diagram does not show the exact position of clamps in the product

Automatic start

As regards the indicated diagrams, in order to activate the module with the automatic start, it is necessary to short the start button between S33 and S34 terminals.



Monitored start

Use the CS AR-23 module following the diagram for the manual start.

Gate monitoring

The safety module can control both emergency stop circuits and gate monitoring circuits, replacing the emergency stop contacts with switches contacts.