CS ME-01 expansion module



Expansion module with output contacts

Main features

- For safety applications up to SIL 3/PL e
- Possibility of control with one or two channels
- Connection of input channels of opposite potentials
- Outputs: relay, 5NO safety, 1NC signalling, 1NC feedback
- Supply voltage: 24 Vac/dc

Quality marks:

EC type examination certificate: IMQ CP 432 DM
UL approval: E131787
CCC approval: 2024010305656748
EAC approval: RU Д-IT.PA07.B.37848/24

Compliance with the requirements of:
Machinery Directive 2006/42/EC,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

In compliance with standards:
EN 60204-1, EN ISO 13855, EN ISO 14118,
EN ISO 12100, EN ISO 13850, EN 60529, EN 61000-6-2,
EN 61000-6-3, EN 61326-1, EN 60664-1, EN 60947-1,
EN IEC 63000, EN ISO 13849-1, EN ISO 13849-2,
EN 62061, UL 508, CSA C22.2 No. 14

Technical data

Housing

Polyamide housing PA 66, self-extinguishing V0 acc. to UL 94	
Protection degree acc. to EN 60529:	IP40 (housing), IP20 (terminal strip)
Dimensions:	see page 135, design A

General data

Safety Integrity Level (SIL) up to:	Maximum SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Safety category up to:	cat. 4 acc. to EN ISO 13849-1 (see base module category)
Safety parameters:	See page 151
Ambient temperature:	-25°C…+55°C
Mechanical endurance:	>10 million operating cycles
Electrical endurance:	>100,000 operating cycles
Pollution degree:	external 3, internal 2
Rated impulse withstand voltage (U_{imp}):	4 kV
Rated insulation voltage (U_i):	250 V
Overvoltage category:	II

Power supply

Rated supply voltage U_n:	24 Vac/dc; 50…60 Hz
Max. DC residual ripple in DC:	10%
Supply voltage tolerance:	±15% of U_n
Power consumption AC:	< 5 VA
Power consumption DC:	< 2 W

Control circuit

Protection against short circuits:	PTC resistance, Ih=0.5 A
PTC times:	response > 100 ms, reset > 3 s
Maximum resistance per input:	≤ 50 Ω
Response time t_A:	< 40 ms
Release time in absence of power supply t_R:	< 50 ms

Output circuit

Output contacts:	5 NO safety contacts, 1 NC auxiliary contact, 1 NC feedback contact
Contact type:	forcibly guided
Material of the contacts:	silver alloy
Maximum switching voltage:	230/240 Vac; 300 Vdc
Utilization categories for output contacts:	AC-15 (50 ... 60 Hz), 230 V / 3 A DC-13 (6 oper. cycles/min.), 24 V / 4 A
Maximum conventional free air thermal current per branch I_{th}:	6 A
Max. total current ΣI_{th}^2:	72 A^2
Minimum current:	10 mA
Contact resistance:	≤ 100 mΩ
External protection fuse:	4 A

Code structure

CS ME-01V024

Connection type	
V	Screw terminals
M	Connector with screw terminals
X	Connector with spring terminals

Supply voltage	
024	24 Vac/dc

Features approved by UL

Rated supply voltage (U_n):	24 Vac/dc; 50…60 Hz
Power consumption AC:	< 5 VA
Power consumption DC:	< 2 W

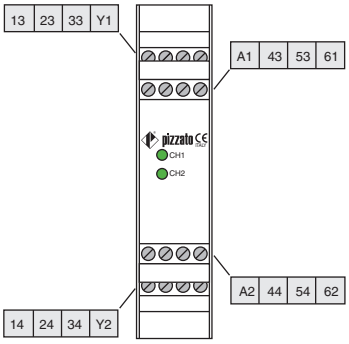
Electrical ratings:
- NO contacts: 230/240 Vac, 6 A general use, C300 pilot duty
- NC contacts: 230/240 Vac, 6 A resistive, B300 pilot duty

Notes:
- Use 60 or 75°C copper (Cu) conductor and wire size No. 30-12 AWG, stranded or solid.
- The terminal tightening torque of 5-7 lb in.
- Only for 24 Vac/dc versions: supply from remote Class 2 source or limited voltage limited energy.

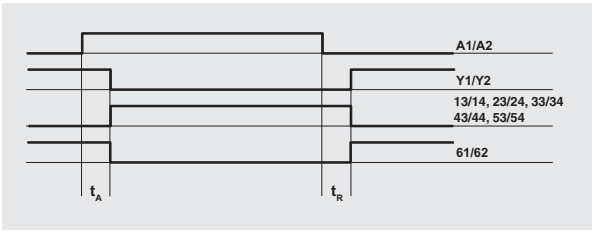
- Utiliser des conducteurs en cuivre (Cu) 60 ou 75°C rigides ou flexibles de section 30-12 AWG.
- Couple de serrage des bornes de 5-7 Lb In.
- Seulement pour les versions 24 Vac/dc, alimenter avec sources de classes 2 ou avec tension limitée et énergie limitée.

CS ME-01 expansion module

Pin assignment

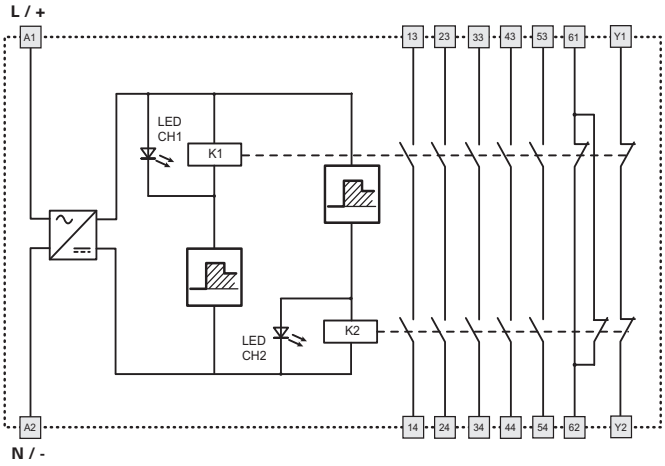


Function diagram



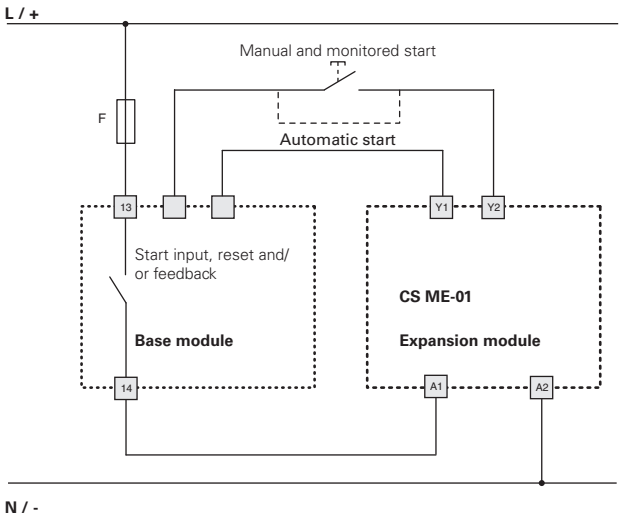
Legend:
t_A: Response time
t_R: Release time in absence of power supply

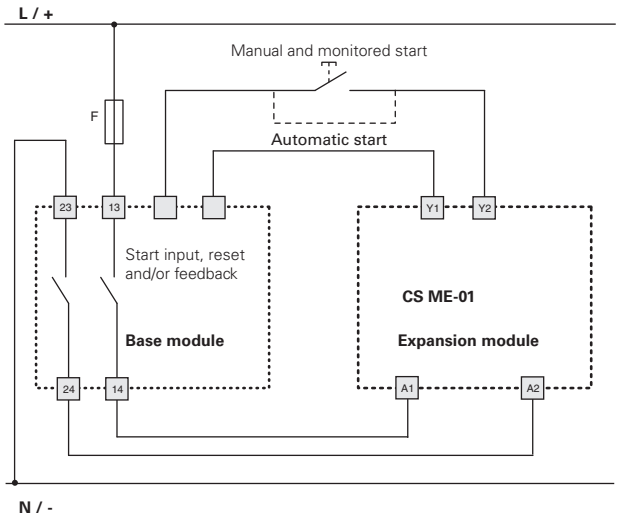
Internal wiring diagram



Input configuration

Single channel control	Double channel control





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

CS ME-02 expansion module



Expansion module with output contacts

Main features

- For safety applications up to SIL 3/PL e
- Possibility of control with one or two channels
- Connection of input channels of opposite potentials
- Outputs: relay, 4NO safety, 2NC signalling, 1NC feedback
- Supply voltage: 24 Vac/dc

Quality marks:

EC type examination certificate: IMQ CP 432 DM
UL approval: E131787
CCC approval: 2024010305656748
EAC approval: RU C-IT.УТ03.B.00035/19

Compliance with the requirements of:
Machinery Directive 2006/42/EC,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

In compliance with standards:
EN 60204-1, EN ISO 13855, EN ISO 14118,
EN ISO 12100, EN ISO 13850, EN 60529, EN 61000-6-2,
EN 61000-6-3, EN 61326-1, EN 60664-1, EN 60947-1,
EN IEC 63000, EN ISO 13849-1, EN ISO 13849-2,
EN 62061, UL 508, CSA C22.2 No. 14, GB/T14048.5

Technical data

Housing

Polyamide housing PA 66, self-extinguishing V0 acc. to UL 94	
Protection degree acc. to EN 60529:	IP40 (housing), IP20 (terminal strip)
Dimensions:	see page 135, design A

General data

Safety Integrity Level (SIL) up to:	Maximum SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Safety category up to:	cat. 4 acc. to EN ISO 13849-1 (see base module category)
Safety parameters:	See page 151
Ambient temperature:	-25°C…+55°C
Mechanical endurance:	>10 million operating cycles
Electrical endurance:	>100,000 operating cycles
Pollution degree:	external 3, internal 2
Rated impulse withstand voltage (U_{imp}):	4 kV
Rated insulation voltage (U_i):	250 V
Overvoltage category:	II

Power supply

Rated supply voltage U_n:	24 Vdc
Max. DC residual ripple in DC:	10%
Supply voltage tolerance:	±15% of U_n
Power consumption DC:	< 2 W

Control circuit

Protection against short circuits:	PTC resistance, Ih=0.5 A
PTC times:	response > 100 ms, reset > 3 s
Maximum resistance per input:	≤ 50 Ω
Response time t_A:	< 100 ms
Release time in absence of power supply t_R:	< 60 ms

Output circuit

Output contacts:	4 NO safety contacts, 2 NC auxiliary contacts, 1 NC feedback contact
Contact type:	forcibly guided
Material of the contacts:	silver alloy
Maximum switching voltage:	230/240 Vac; 300 Vdc
Utilization categories for output contacts:	AC-15 (50 ... 60 Hz), 230 V / 3 A DC-13 (6 oper. cycles/min.), 24 V / 4 A
Maximum conventional free air thermal current per branch I_{th}:	6 A
Max. total current ΣI_{th}^2:	64 A^2
Minimum current:	10 mA
Contact resistance:	≤ 100 mΩ
External protection fuse:	4 A

Code structure

CS ME-02VU24

Connection type	
V	Screw terminals
M	Connector with screw terminals
X	Connector with spring terminals

Supply voltage	
U24	24 Vdc

Features approved by UL

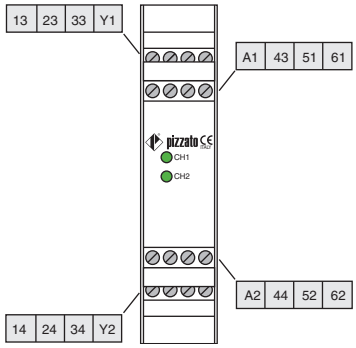
Rated supply voltage (U_n): 24 Vdc
Power consumption DC: < 2 W
Electrical ratings:
- NO contacts: 230/240 Vac, 6 A general use, C300 pilot duty
- NC contacts: 230/240 Vac, 6 A resistive, B300 pilot duty

Notes:
- Use 60 or 75°C copper (Cu) conductor and wire size No. 30-12 AWG, stranded or solid.
- The terminal tightening torque of 5-7 lb in.
- Only for 24 Vac/dc versions: supply from remote Class 2 source or limited voltage limited energy.

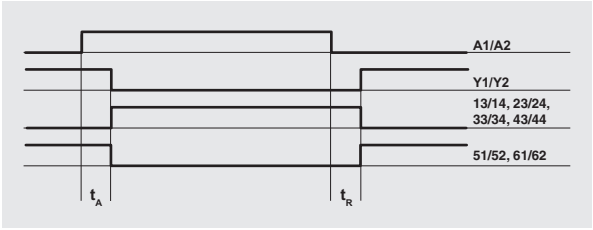
- Utiliser des conducteurs en cuivre (Cu) 60 ou 75°C rigides ou flexibles de section 30-12 AWG.
- Couple de serrage des bornes de 5-7 Lb In.
- Seulement pour les versions 24 Vac/dc, alimenter avec sources de classes 2 ou avec tension limitée et énergie limitée.

CS ME-02 expansion module

Pin assignment

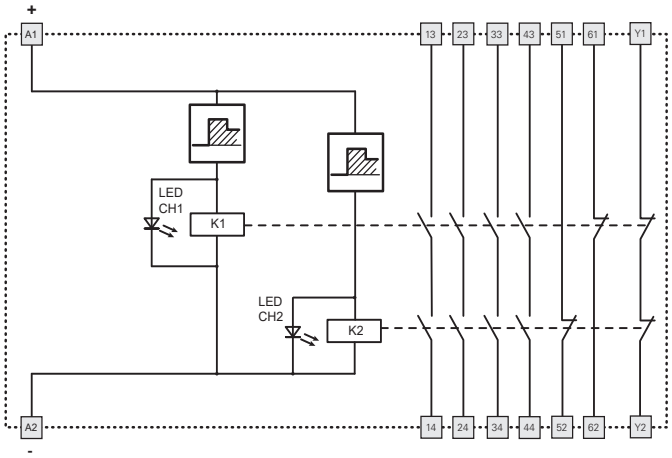


Function diagram



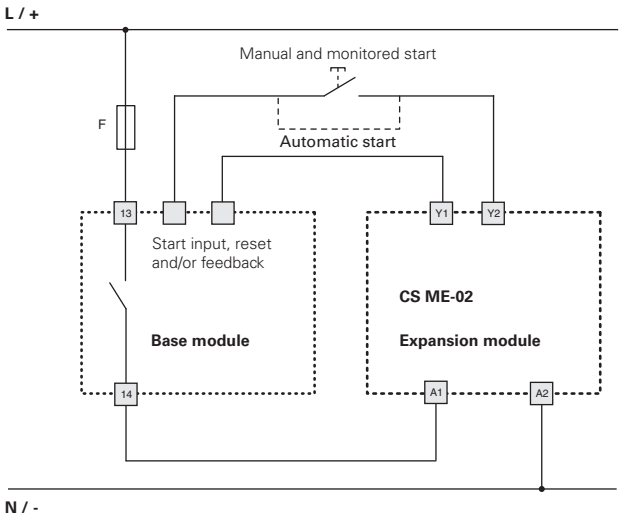
Legend:
t_A: Response time
t_R: Release time in absence of power supply

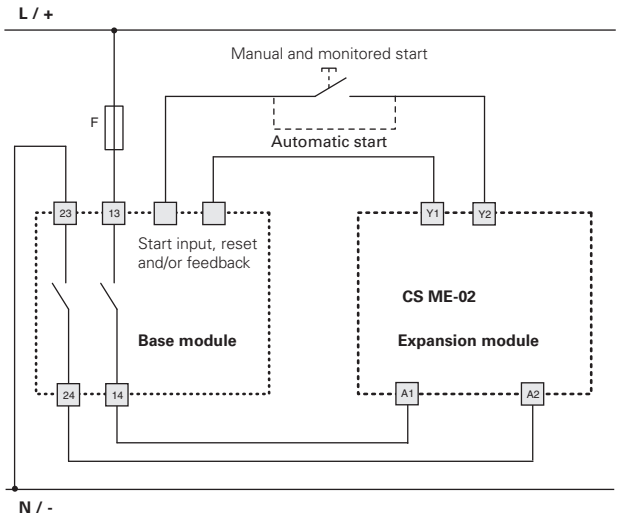
Internal wiring diagram



Input configuration

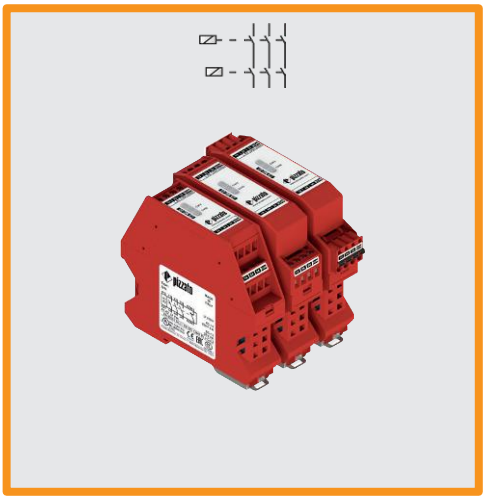
Single channel control	Double channel control





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

CS ME-03 expansion module



Expansion module with output contacts

Main features

- For safety applications up to SIL 3/PL e
- Inputs: 2 OSSD solid state
- Outputs: relay, 3NO safety, 1NC feedback/ EDM
- Supply voltage: 24 Vac/dc

Quality marks:

EC type examination certificate: IMQ CP 432 DM
UL approval: E131787
CCC approval: 2024010305656748
EAC approval: RU C-IT.УТ03.B.00035/19

Compliance with the requirements of:
Machinery Directive 2006/42/EC,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

In compliance with standards:
EN 60204-1, EN ISO 13855, EN ISO 14118,
EN ISO 12100, EN ISO 13850, EN 60529, EN 61000-6-2,
EN 61000-6-3, EN 61326-1, EN 60664-1, EN 60947-1,
EN IEC 63000, EN ISO 13849-1, EN ISO 13849-2,
EN 62061, UL 508, CSA C22.2 No. 14, GB/T14048.5

Technical data

Housing

Polyamide housing PA 66, self-extinguishing V0 acc. to UL 94

Protection degree acc. to EN 60529:	IP40 (housing), IP20 (terminal strip)
Dimensions:	see page 135, design D

General data

Safety Integrity Level (SIL) up to:	Maximum SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Safety category up to:	cat. 4 acc. to EN ISO 13849-1 (dependent on semiconductor outputs)
Safety parameters:	See page 151
Ambient temperature:	-25°C…+55°C
Mechanical endurance:	>10 million operating cycles
Electrical endurance:	>100,000 operating cycles
Pollution degree:	external 3, internal 2
Rated impulse withstand voltage (U_{imp}):	4 kV
Rated insulation voltage (U_i):	250 V
Overvoltage category:	II

Input circuit

Rated input voltage (U_n):	24 Vdc
Max. DC residual ripple in DC:	10%
Tolerance of the input voltage:	±15% of U_n
Power consumption DC:	< 2 W
Consumption at start:	< 3 W

Control circuit

Response time t_A:	< 40 ms
Release time t_{R1}:	< 20 ms

Output circuit

Output contacts:	3 NO safety contacts, 1 NC feedback contact
Contact type:	forcibly guided
Material of the contacts:	silver alloy
Maximum switching voltage:	230/240 Vac; 300 Vdc
Utilization categories for output contacts:	AC-15 (50 ... 60 Hz), 230 V / 3 A DC-13 (6 oper. cycles/min.), 24 V / 4 A
Maximum conventional free air thermal current per branch I_{th}:	6 A
Max. total current ΣI_{th}^2:	36 A²
Minimum current:	10 mA
Contact resistance:	≤ 100 mΩ
External protection fuse:	4 A

Code structure

CS ME-03VU24

Connection type		Supply voltage	
V	Screw terminals	**U24**	24 Vdc
M	Connector with screw terminals		
X	Connector with spring terminals		

Features approved by UL

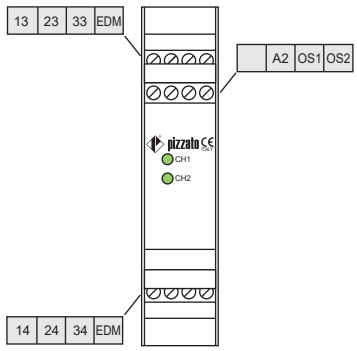
Rated supply voltage (U_n): 24 Vdc
Power consumption DC: < 2 W
Electrical ratings:
- NO contacts: 230/240 Vac, 6 A general use, C300 pilot duty
- NC contacts: 230/240 Vac, 6 A resistive, B300 pilot duty

Notes:
- Use 60 or 75°C copper (Cu) conductor and wire size No. 30-12 AWG, stranded or solid.
- The terminal tightening torque of 5-7 lb in.
- Only for 24 Vac/dc versions: supply from remote Class 2 source or limited voltage limited energy.

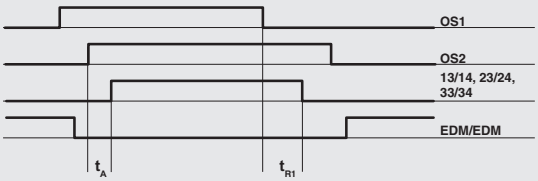
- Utiliser des conducteurs en cuivre (Cu) 60 ou 75°C rigides ou flexibles de section 30-12 AWG.
- Couple de serrage des bornes de 5-7 Lb In.
- Seulement pour les versions 24 Vac/dc, alimenter avec sources de classes 2 ou avec tension limitée et énergie limitée.

CS ME-03 expansion module

Pin assignment

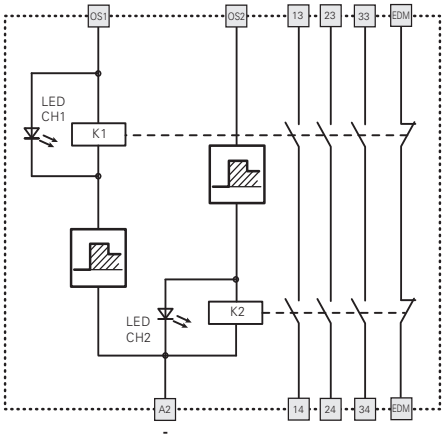


Function diagram



Legend:
t_A: Response time
t_{R1}: Release time

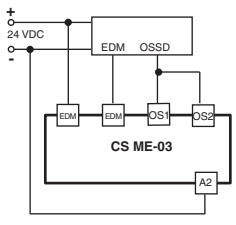
Internal wiring diagram

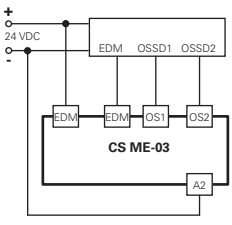


Application example on page 87.

Input configuration

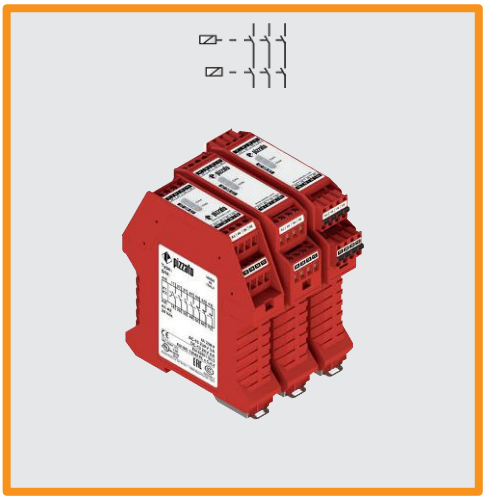
OSSD semiconductor outputs (e.g. ST, NS, NG series or light barriers)	
1 channel	2 channels





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

CS ME-20 expansion module



Expansion module with delayed output contacts at de-energizing

Main features

- For safety applications up to SIL 3/PL e
- Possibility of control with one or two channels
- 4 delay times 0.5 - 1 - 2 and 3 s
- Outputs: relay, 4NO safety, 2NC signalling, 1NC feedback
- Supply voltage: 24 Vac/dc

Quality marks:

EC type examination certificate: IMQ CP 432 DM
UL approval: E131787
CCC approval: 2024010305656748
EAC approval: RU C-IT.УТ03.B.00035/19

Compliance with the requirements of:
Machinery Directive 2006/42/EC,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

In compliance with standards:
EN 60204-1, EN ISO 13855, EN ISO 14118,
EN ISO 12100, EN ISO 13850, EN 60529, EN 61000-6-2,
EN 61000-6-3, EN 61326-1, EN 60664-1, EN 60947-1,
EN IEC 63000, EN ISO 13849-1, EN ISO 13849-2,
EN 62061, UL 508, CSA C22.2 No. 14, GB/T14048.5

Technical data

Housing

Polyamide housing PA 66, self-extinguishing V0 acc. to UL 94	
Protection degree acc. to EN 60529:	IP40 (housing), IP20 (terminal strip)
Dimensions:	see page 135, design A

General data

Safety Integrity Level (SIL) up to:	Maximum SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Safety category up to:	cat. 4 acc. to EN ISO 13849-1 (see base module category)
Safety parameters:	See page 151
Ambient temperature:	-25°C…+55°C
Mechanical endurance:	>10 million operating cycles
Electrical endurance:	>100,000 operating cycles
Pollution degree:	external 3, internal 2
Rated impulse withstand voltage (U_{imp}):	4 kV
Rated insulation voltage (U_i):	250 V
Overvoltage category:	II

Power supply

Rated supply voltage U_n:	24 Vdc
Max. DC residual ripple in DC:	10%
Supply voltage tolerance:	±15% of U_n
Power consumption DC:	< 2 W

Control circuit

Maximum resistance per input:	≤ 50 Ω
Response time t_A:	< 120 ms
Release time in absence of power supply t_R:	see Code structure

Output circuit

Output contacts:	4 NO safety contacts, 2 NC auxiliary contacts, 1 NC feedback contact
Contact type:	forcibly guided
Material of the contacts:	silver alloy
Maximum switching voltage:	230/240 Vac; 300 Vdc
Utilization categories for output contacts:	AC-15 (50 ... 60 Hz), 230 V / 3 A DC-13 (6 oper. cycles/min.), 24 V / 4 A
Maximum conventional free air thermal current per branch I_{th}:	6 A
Max. total current ΣI_{th}^2:	64 A²
Minimum current:	10 mA
Contact resistance:	≤ 100 mΩ
External protection fuse:	4 A

Code structure

CS ME-20VU24-TF1

Connection type	
V	Screw terminals
M	Connector with screw terminals
X	Connector with spring terminals

Release time in absence of power supply (t_R)	
TF0.5	0.5 s fixed time
TF1	1 s fixed time
TF2	2 s fixed time
TF3	3 s fixed time

Features approved by UL

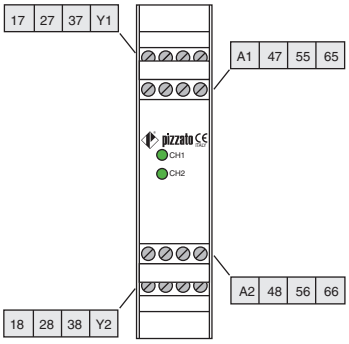
Rated supply voltage (U_n): 24 Vdc
Power consumption DC: < 2 W
Electrical ratings:
- NO contacts: 230/240 Vac, 6 A general use, C300 pilot duty
- NC contacts: 230/240 Vac, 6 A resistive, B300 pilot duty

Notes:
- Use 60 or 75°C copper (Cu) conductor and wire size No. 30-12 AWG, stranded or solid.
- The terminal tightening torque of 5-7 lb in.
- Only for 24 Vac/dc versions: supply from remote Class 2 source or limited voltage limited energy.

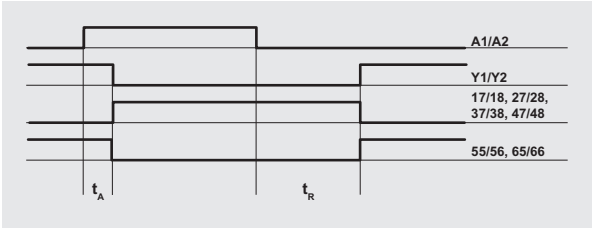
- Utiliser des conducteurs en cuivre (Cu) 60 ou 75°C rigides ou flexibles de section 30-12 AWG.
- Couple de serrage des bornes de 5-7 Lb In.
- Seulement pour les versions 24 Vac/dc, alimenter avec sources de classes 2 ou avec tension limitée et énergie limitée.

CS ME-20 expansion module

Pin assignment

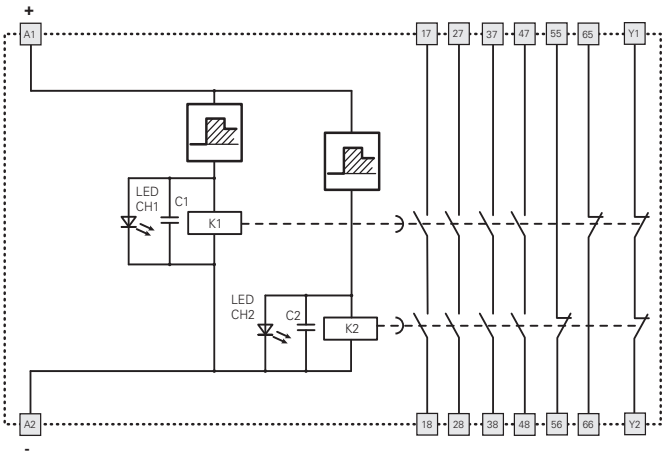


Function diagram



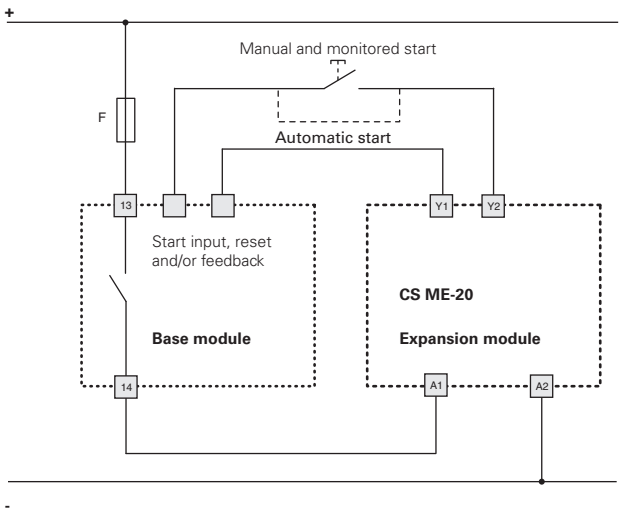
Legend:
t_A: response time
t_R: release time in absence of power supply
(see "Code structure")

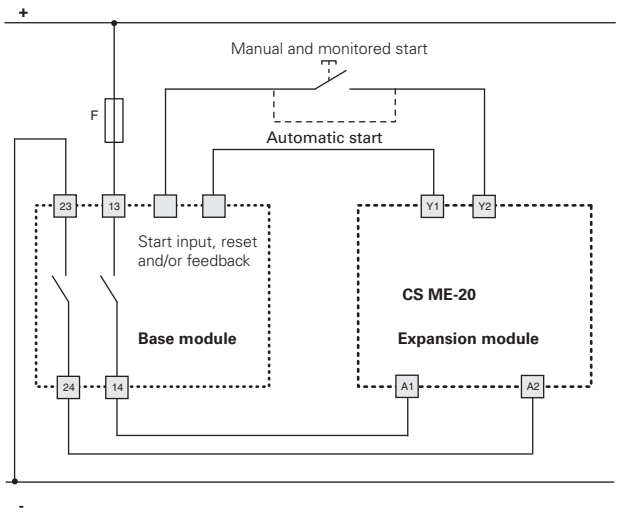
Internal wiring diagram



Input configuration

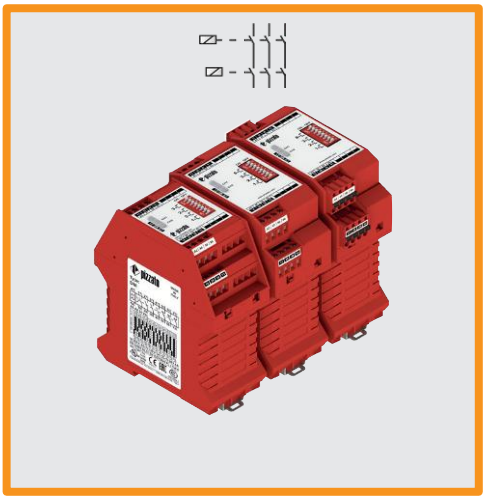
Single channel control	Double channel control





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

CS ME-31 expansion module



Expansion module with delayed output contacts at de-energizing

Main features

- For safety applications up to SIL 3/PL e
- Possibility of control with one or two channels
- Adjustable delay time
- Outputs: relay, 4NO safety, 2NC signalling, 1NC feedback
- Supply voltage: 24 Vac/dc

Quality marks:

EC type examination certificate: IMQ CP 432 DM
UL approval: E131787
CCC approval: 2024010305656748
EAC approval: RU C-IT.УТ03.B.00035/19

Compliance with the requirements of:
Machinery Directive 2006/42/EC,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

In compliance with standards:
EN 60204-1, EN ISO 13855, EN ISO 14118,
EN ISO 12100, EN ISO 13850, EN 60529, EN 61000-6-2,
EN 61000-6-3, EN 61326-1, EN 60664-1, EN 60947-1,
EN IEC 63000, EN ISO 13849-1, EN ISO 13849-2,
EN 62061, UL 508, CSA C22.2 No. 14, GB/T14048.5

Technical data

Housing

Polyamide housing PA 66, self-extinguishing V0 acc. to UL 94	
Protection degree acc. to EN 60529:	IP40 (housing), IP20 (terminal strip)
Dimensions:	see page 135, design C

General data

Safety Integrity Level (SIL) up to:	Maximum SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Safety category up to:	cat. 4 acc. to EN ISO 13849-1 (see base module category)
Safety parameters:	See page 151
Ambient temperature:	-25°C…+55°C
Mechanical endurance:	>10 million operating cycles
Electrical endurance:	>100,000 operating cycles
Pollution degree:	external 3, internal 2
Rated impulse withstand voltage (U_{imp}):	4 kV
Rated insulation voltage (U_i):	250 V
Overvoltage category:	II

Power supply

Rated supply voltage (U_n):	24 Vdc
Max. DC residual ripple in DC:	10%
Supply voltage tolerance:	±15% of U_n
Power consumption DC:	< 2 W

Control circuit

Maximum resistance per input:	≤ 50 Ω
Response time t_A:	< 200 ms
Release time in absence of power supply t_R:	see Code structure

Output circuit

Output contacts:	4 NO safety contacts, 2 NC auxiliary contacts, 1 NC feedback contact
Contact type:	forcibly guided
Material of the contacts:	silver alloy
Maximum switching voltage:	230/240 Vac; 300 Vdc
Max. current per 1 NC contact:	< 6 A
Utilization categories for output contacts:	AC-15 (50 ... 60 Hz), 230 V / 3 A DC-13 (6 oper. cycles/min.), 24 V / 4 A
Maximum conventional free air thermal current per branch I_{th}:	6 A
Max. total current Σ I_{th}^2:	64 A²
Minimum current:	10 mA
Contact resistance:	≤ 100 mΩ
External protection fuse:	4 A

Code structure

CS ME-31VU24-TS12

Connection type	
V	Screw terminals
M	Connector with screw terminals
X	Connector with spring terminals

Release time in absence of power supply (t_R)	
TS12	Adjustable time, 1 … 12 s, 1 s steps

Features approved by UL

Rated supply voltage (U_n):	24 Vdc
Power consumption DC:	< 2 W

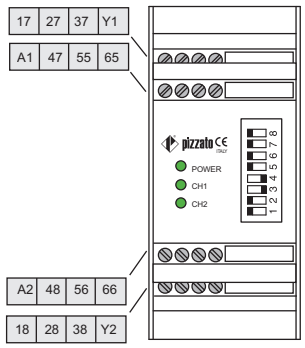
Electrical ratings:
- NO contacts: 230/240 Vac, 6 A general use, C300 pilot duty
- NC contacts: 230/240 Vac, 6 A resistive, B300 pilot duty

Notes:
- Use 60 or 75°C copper (Cu) conductor and wire size No. 30-12 AWG, stranded or solid.
- The terminal tightening torque of 5-7 lb in.
- Only for 24 Vac/dc versions: supply from remote Class 2 source or limited voltage limited energy.

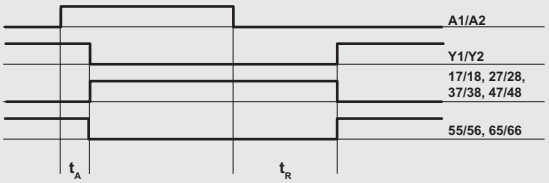
- Utiliser des conducteurs en cuivre (Cu) 60 ou 75°C rigides ou flexibles de section 30-12 AWG.
- Couple de serrage des bornes de 5-7 Lb In.
- Seulement pour les versions 24 Vac/dc, alimenter avec sources de classes 2 ou avec tension limitée et énergie limitée.

CS ME-31 expansion module

Pin assignment

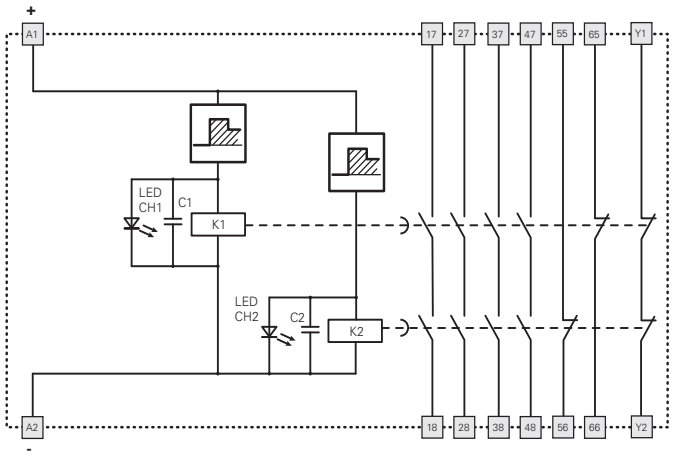


Function diagram



Legend:
t_A: response time
t_R: release time in absence of power supply (see "Code structure")

Internal wiring diagram

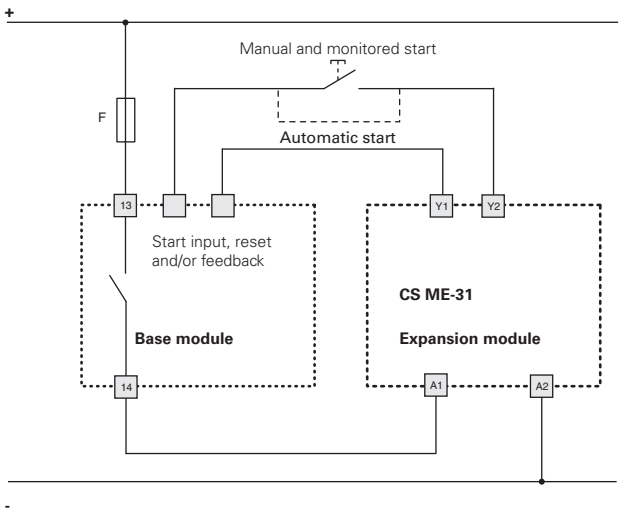


Release time selection t_R

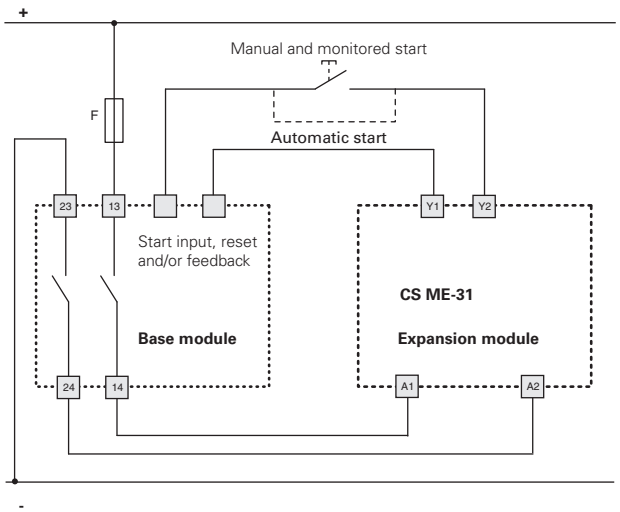
DIP SWITCH	t_R (s)
ON / OFF	1
ON / OFF	2
ON / OFF	3
ON / OFF	4
ON / OFF	5
ON / OFF	6
ON / OFF	7
ON / OFF	8
ON / OFF	9
ON / OFF	10
ON / OFF	11
ON / OFF	12

Input configuration

Single channel control

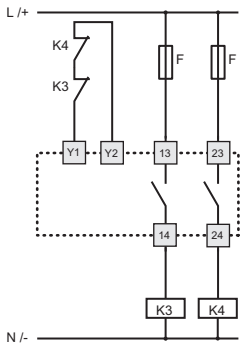


Double channel control



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

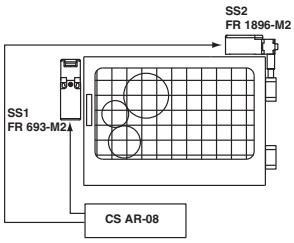
External contactors for increasing the number and the load capacity of the contacts

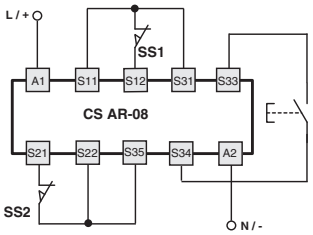


If necessary the number and the load capacity of output contacts can be increased by using expansion modules or contactors with forcibly guided contacts. For control of the external contactors, a NC contact of each relay is connected to the safety module feedback circuit between the start button terminals.

The following installation examples make use of the CS AR-08•••• module. For the use of other modules, see features, compatibility and internal wiring diagram of each single module.

Application examples: monitoring of movable guards, up to category 4 according to EN ISO 13849-1



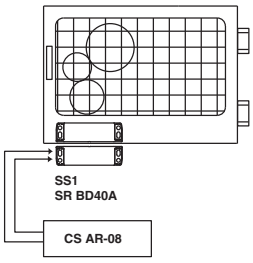


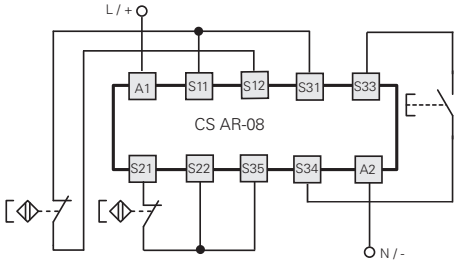
Compatible modules

CS AR-01•••• CS AR-02••••
CS AR-04•••• CS AR-05••••
CS AR-06•••• CS AR-07••••
CS AR-08•••• CS AT-0•••••
CS AT-1••••• CS AT-3•••••
CS AR-91•024

Monitoring of one movable guard through two switches with different technology. System in safety category 4.

Application examples: monitoring of safety magnetic sensors, up to category 4 according to EN ISO 13849-1



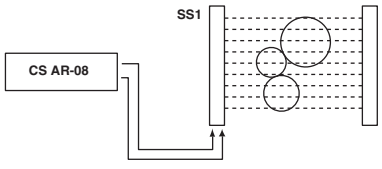


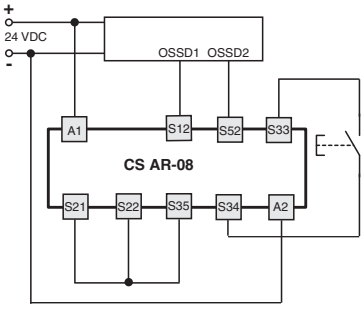
Compatible modules

CS AR-01•••• CS AR-02••••
CS AR-04•024 CS AR-05••••
CS AR-06•••• CS AR-08••••
CS AT-0••••• CS AT-1•••••
CS AT-3••••• CS AR-91•024

Monitoring of one movable guard through one coded magnetic sensor. System in safety category 4.

Application examples: light barrier monitoring, up to category 4 according to EN ISO 13849-1



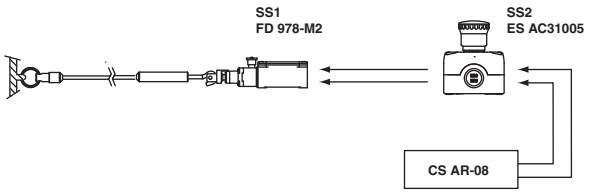


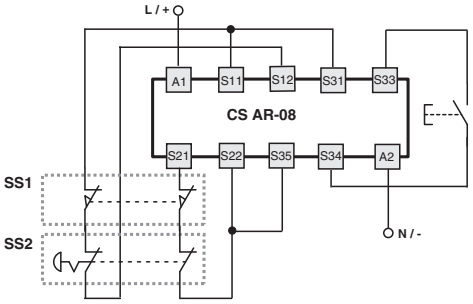
Compatible modules

CS AR-01•••• CS AR-05••••
CS AR-06•••• CS AR-08••••
CS AT-0••••• CS AT-1•••••

Semiconductor outputs (e.g. light barriers) with two OSSD outputs. System in safety category 2 or 4 according to the barrier.

Application examples: monitoring of a switch and a button for emergency stop, up to cat. 3 according to EN ISO 13849-1

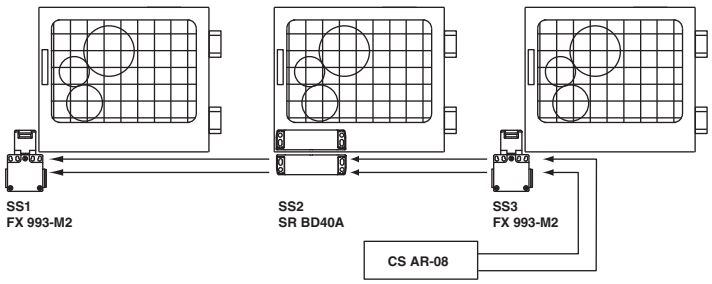


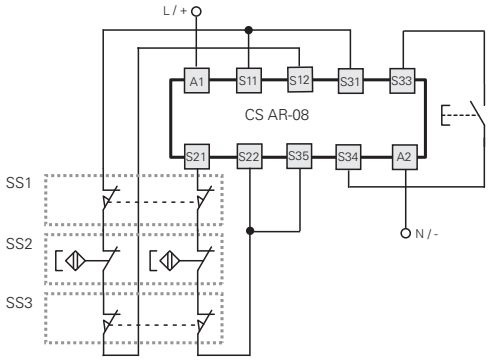


Compatible modules

CS AR-01••••	CS AR-02••••	CS AR-04••••	CS AR-05••••
CS AR-06••••	CS AR-07••••	CS AR-08••••	CS AR-20••••
CS AR-21••••	CS AR-22••••	CS AR-23••••	CS AR-24••••
CS AR-25••••	CS AT-0•••••	CS AT-1•••••	CS AT-3•••••
CS AR-91•024			

Application examples: monitoring of a series of switches and magnetic sensors, up to cat. 3 according to EN ISO 13849-1





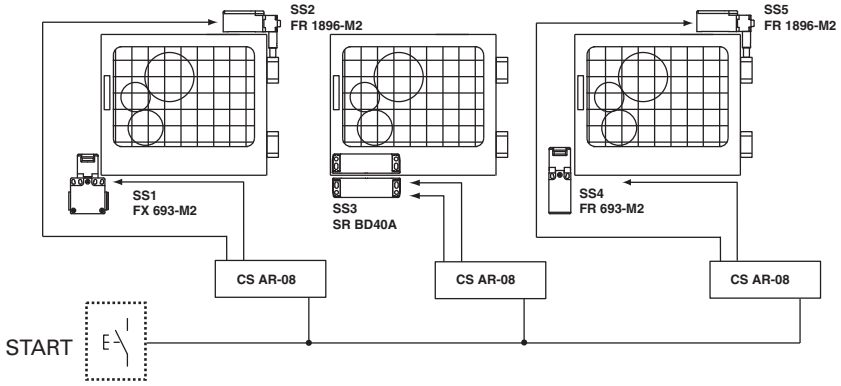
Compatible modules

CS AR-01••••	CS AR-02••••	CS AR-04•024	CS AR-05••••
CS AR-06••••	CS AR-08••••	CS AT-0•••••	CS AT-1•••••
CS AT-3•••••	CS AR-91•024		

Monitoring of several guards through switches and magnetic sensors. System in category 3. For the calculation of the diagnostic coverage, see ISO TR24119.

- The use of just one switch per guard requires that it be possible to exclude the possibility of mechanical breakage of the switch during the risk assessment.
- The sensor must have two channels and be coded.
- If available, verify the provisions of the Type C standard for your own machine.

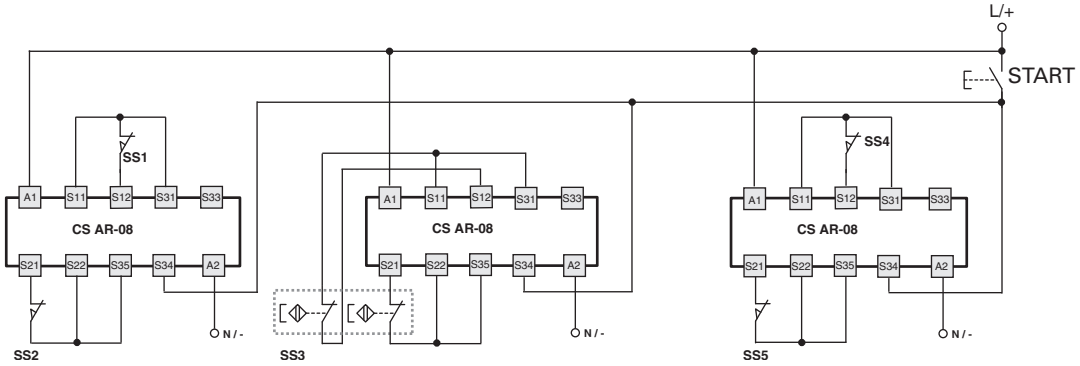
Application examples: possibility of parallel module reset, up to category 4 according to EN ISO 13849-1



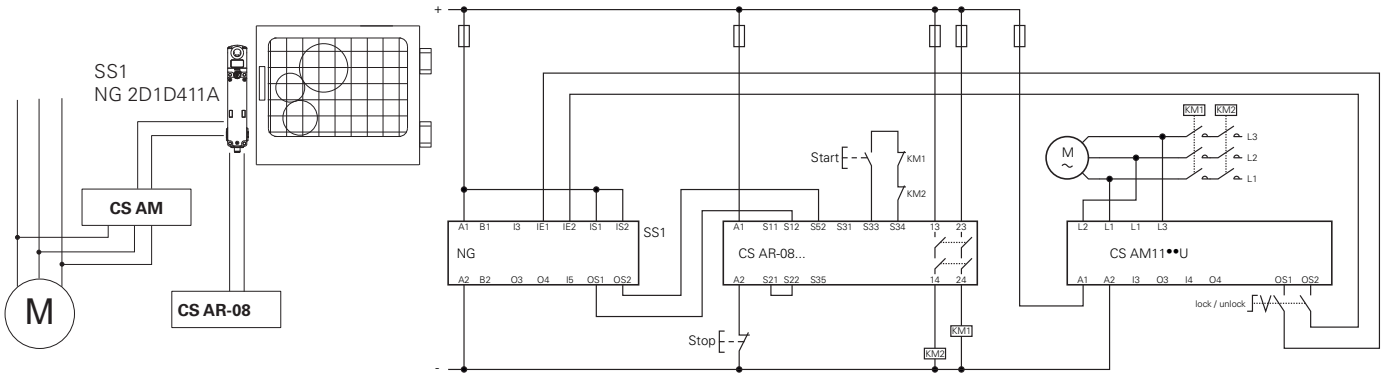
Monitoring of several guards through different technologies. System in safety category 4. The example shows the possibility of a contemporaneous reset of several modules via a single contact of a button.

Compatible modules

CS AR-04•024	CS AR-05•024	CS AR-06•024
CS AR-08•024	CS AR-91•024	

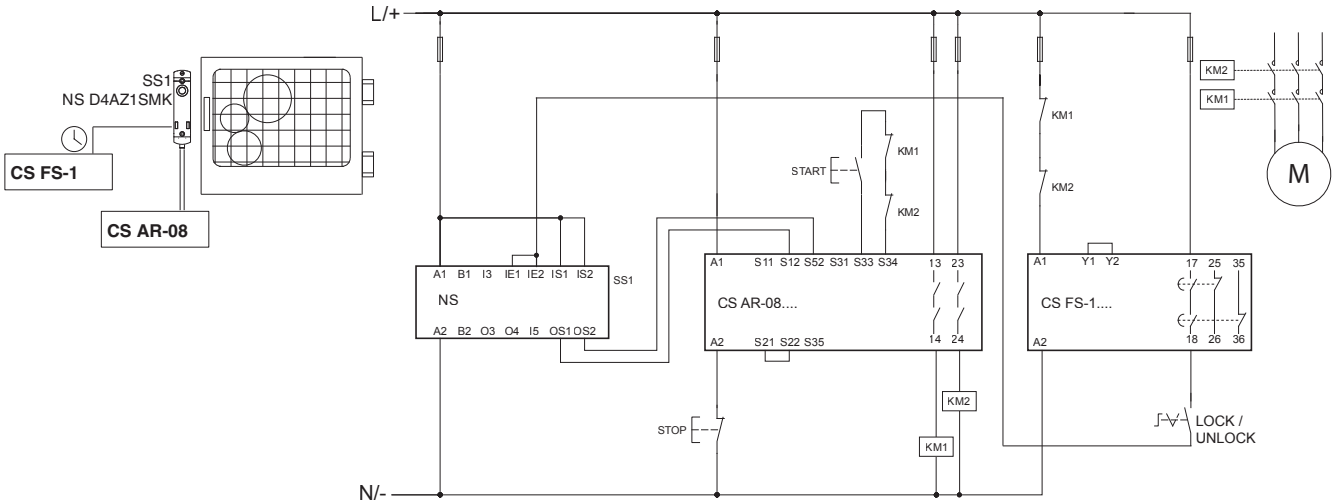


Movable guard monitoring in category 4 up to PL e acc. to EN ISO 13849-1
Guard interlock in category 4 up to PL e acc. to EN ISO 13849-1



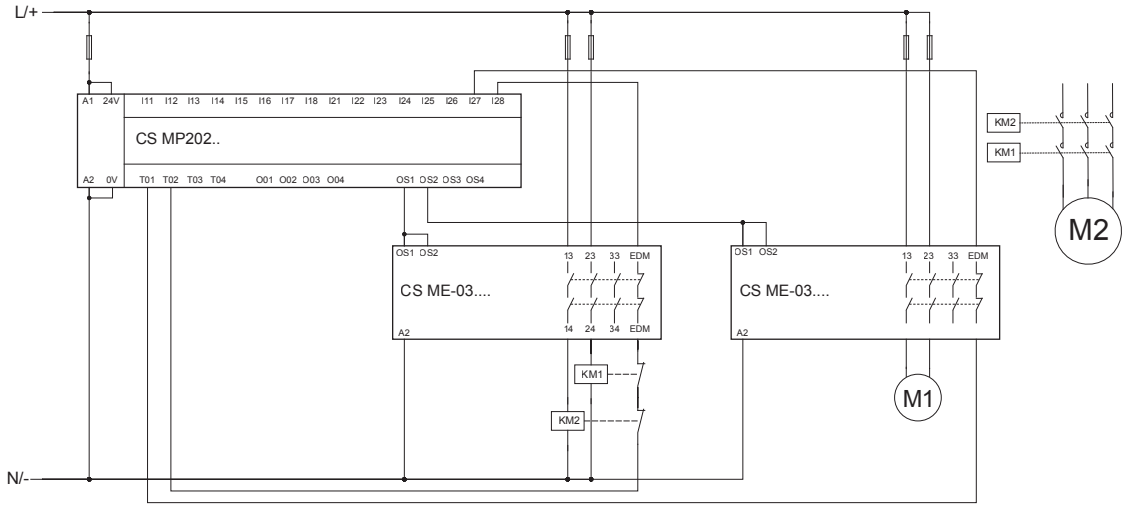
Guard monitoring and interlock by means of interlocking device with RFID technology in category 4, PL e and SIL3.
Release command enabled by the safety module for standstill monitoring.

Movable guard monitoring in category 4 up to PL e acc. to EN ISO 13849-1
Guard interlock in category 2 up to PL d acc. to EN ISO 13849-1



Guard monitoring and interlock by means of interlocking device with RFID technology in category 4, PL e and SIL3.
Release command enabled by the safety timer.

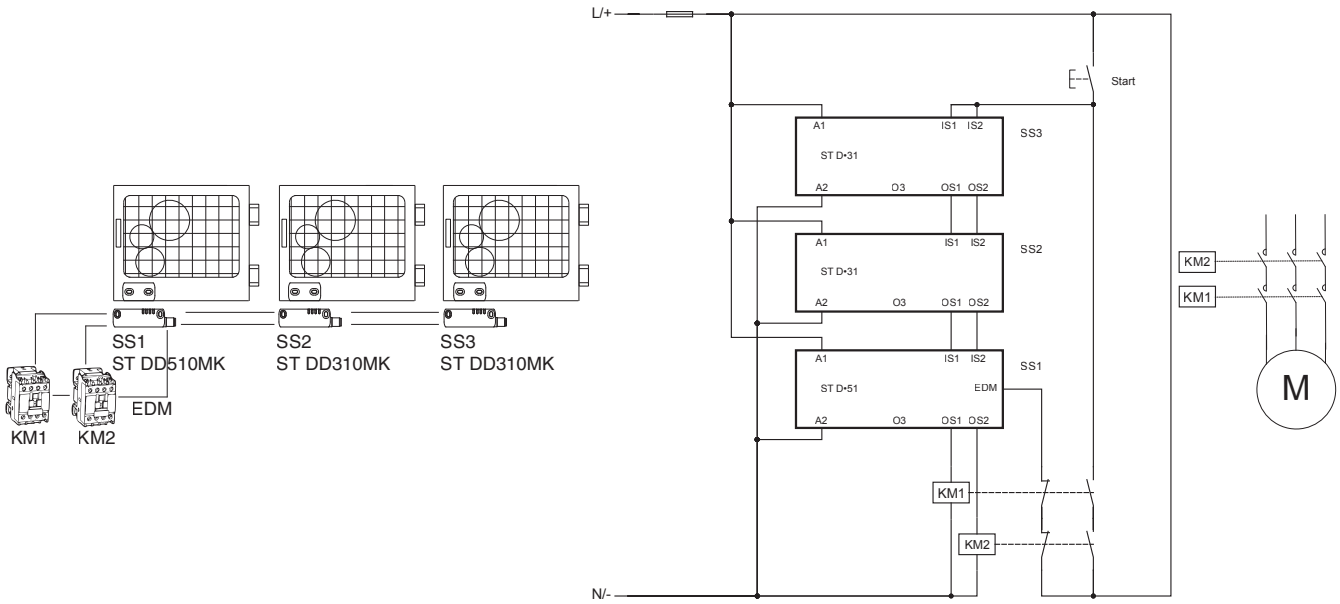
Connection of two expansion modules to the PNP safety outputs of a programmable module of the GEMNIS series



The circuit diagram only shows the connection of the expansion modules; the connection of inputs and other outputs was intentionally omitted.
Note: Motor M1 with load according to the utilisation categories of the contacts of the CS ME-03 module.
Note: The connection between OS1 of module CS MP202 and inputs OS1 and OS2 of module CS ME-03 can be regarded as fault-excluded since both are located in the same switching cabinet. See table D.4, item D.2.4 of EN ISO 13849-2.

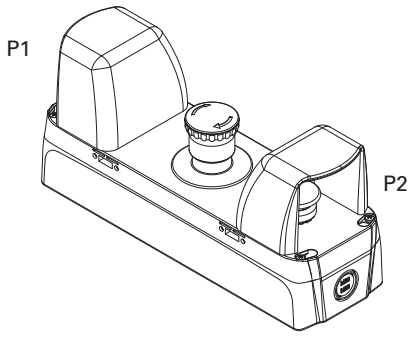
Note: The NC contacts of KM1 and KM2 are mechanically guided (EN 60947-4-1, Annex F)

Monitoring of guards by means of sensors with RFID technology in series connection



Direct monitoring of the status of the contactors via the EDM input of the last sensor in the series connection

Category IIIC two-hand control acc. to EN ISO 13851



EA AC37041

