



Expansion modules with output contacts

Main functions

- For safety applications up to SIL 3 / PL e
- Possibility of control with 1 or 2 channels
- Connection of the input channels to opposite potentials
- Small 22,5 mm housing
- Output contacts:
 - 5 NO safety contacts,
 - 1 NC auxiliary contact,
 - 1 NC feedback 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) 4

Markings, quality marks and certificates:

Approval UL: E131787

Approval GOST: POCC ITAB24.B04512

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 5/81, shape A
General data	
SIL level (SIL CL):	up to SIL 3 according to EN IEC 62061
Performance Level (PL):	up to PL e according to EN ISO 13849-1
Safety category:	upto cat. 4 according to EN ISO 13849-1 (dependent on the base module)
Safety parameters:	see page 7/34
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:	II
Weight:	0,3 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, I _h =0,5 A
Operating time of PTC:	intervention > 100 ms, reset > 3 s
Max input resistance:	≤ 50 Ω
Operating time t _A :	< 40 ms
Releasing time in absence of power supply t _R :	< 40 ms
In conformity with standards:	
IEC 60947-1, EN 60947-5-1, 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, EN 60947-5-1, EN 62061, EN 13849-1, UL 508, CSA C22.2 n° 14-95	
Output circuit	
Output contacts:	5 NO safety contacts, 1 NC auxiliary contact, 1 NC feedback 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 I _{th} :	6 A
Max currents sum Σ I _{th} ² :	72 A ²
Min. current:	10 mA
Contacts resistance:	≤ 100 mΩ
Contact protection fuse:	6 A, F type

Code structure

CS ME-01V024

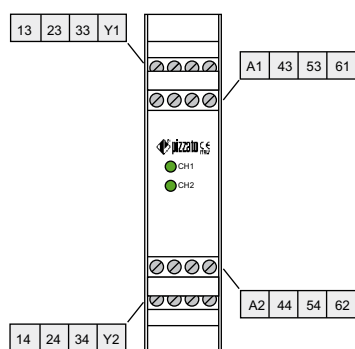
Kind of connection	Supply voltage
V screw terminals	024 24 Vac/dc ±15%
M connector with screw terminals	
X connector with spring terminals	

Data type approved by UL

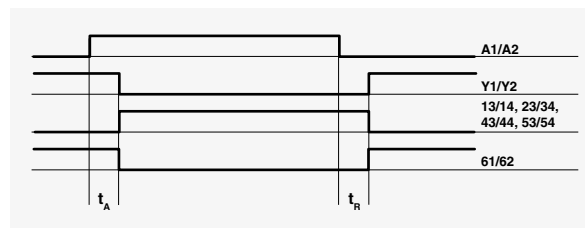
Rated operating voltage (Un):	24 Vac/dc; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W
Max switching voltage:	230 Vac
Max switching current per contact:	6 A
Utilization category	C300

Expansion module CS ME-01

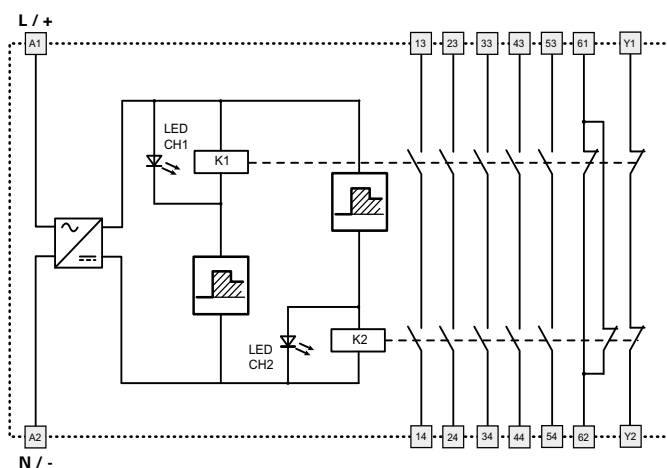
Terminals layout



Operations diagram



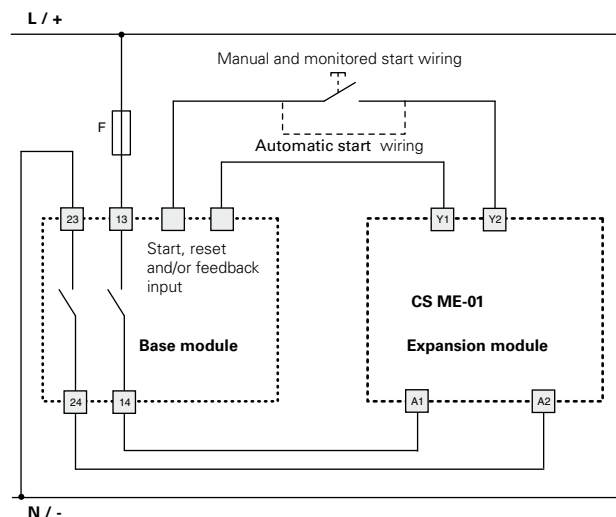
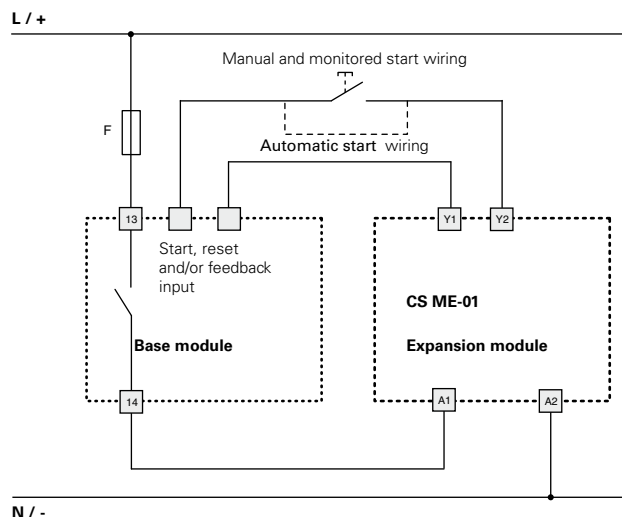
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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



Expansion modules with output contacts

Main functions

- For safety applications up to SIL 3 / PL e
- Possibility of control with 1 or 2 channels
- Connection of the input channels to opposite potentials
- Small 22,5 mm housing
- Output contacts:
 - 4 NO safety contacts,
 - 2 NC auxiliary contact,
 - 1 NC feedback contact
- Supply voltages: 24 Vdc

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) 4

Markings, quality marks and certificates:



Approval UL: E131787

Approval GOST: POCC IT.AB24.B04512

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 5/81, shape A

General data

SIL level (SIL CL): up to SIL 3 according to EN IEC 62061

Performance Level (PL): up to PL e according to EN ISO 13849-1

Safety category: upto cat. 4 according to EN ISO 13849-1 (dependent on the base module)

Safety parameters: see page 7/34

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): 2,5 kV

Rated insulation voltage (Ui): 250 V

Over-voltage category: II

Weight: 0,3 kg

Power supply

Rated operating voltage (Un): 24 Vdc

Max residual ripple in DC: 10%

Supply voltage tolerance: ±15% of Un

Rated power consumption DC: < 2 W

Control circuit

Protection against short circuits: resistance PTC, I_h=0,5 A

Operating time of PTC: intervention > 100 ms, reset > 3 s

Max input resistance: ≤ 50 Ω

Operating time t_A: < 100 ms

Releasing time in absence of power supply t_R: < 60 ms

In conformity with standards:

IEC 60947-1, EN 60947-5-1, 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, EN 60947-5-1, EN 62061, EN 13849-1, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:

4 NO safety contacts,

2 NC auxiliary contact,

1 NC feedback 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 I_{th}: 6 A

Max currents sum Σ I_{th}²: 64 A²

Min. current: 10 mA

Contacts resistance: ≤ 100 mΩ

Contact protection fuse: 6 A, F type

Code structure

CS ME-02VU24

Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage		
U24	24 Vdc	±15%

Data type approved by UL

Rated operating voltage (Un): 24 Vdc

Rated power consumption DC: < 2 W

Max switching voltage: 230 Vac

Max switching current per contact: 6 A

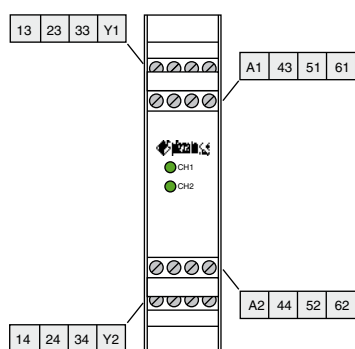
Utilization category: C300

Notes:

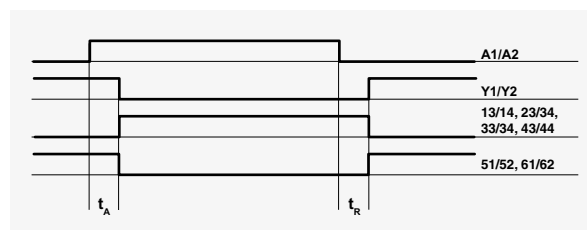
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.
- Terminal tightening torque of 5-7 Lb In.
- Only for 24 Vdc version, supply from remote class 2 source or limited voltage and limited energy.

Expansion module CS ME-02

Terminals layout



Operations diagram

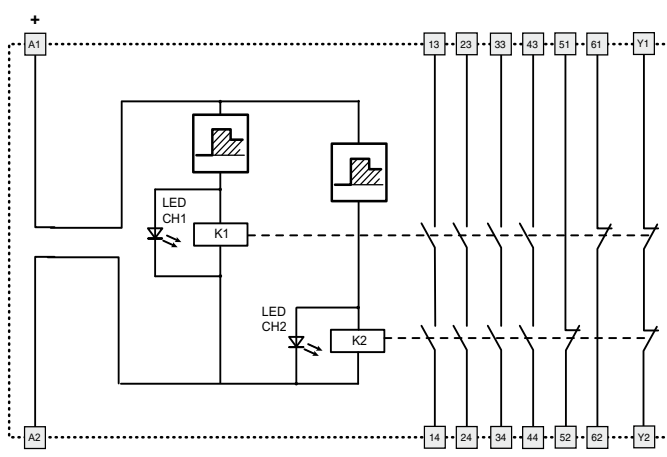


Legend:

t_A : Operating time

t_R : Releasing time in absence of power supply

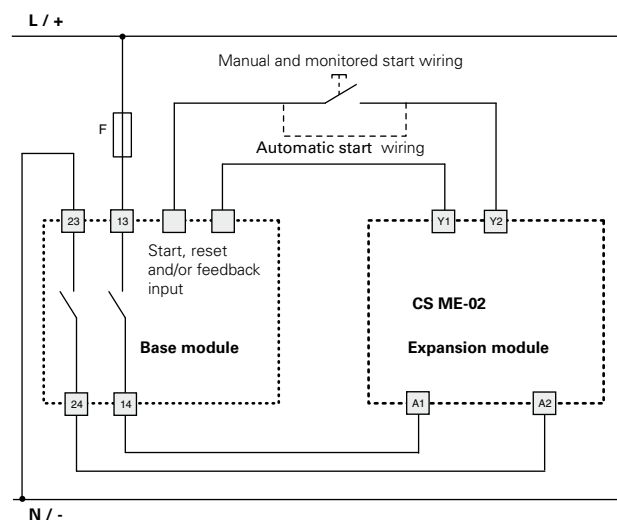
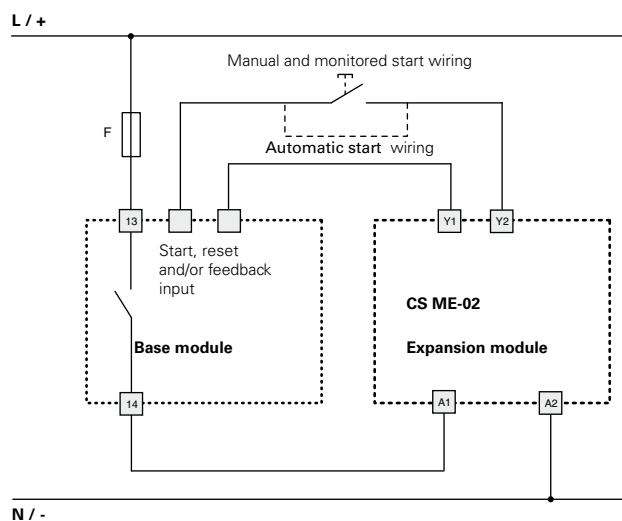
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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



Expansion modules with output contacts

Main functions

- For safety applications up to SIL 3 / PL e
- Module for solid-state output circuits (optical barriers type 2 and 4)
- 2 OSSD inputs
- Small 22,5 mm housing
- Output contacts:
 - 3 NO safety contacts,
 - 1 NC feedback contact/EDM contact
- Supply voltages: 24 Vdc

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) 4

Markings, quality marks and certificates:

Approval UL: E131787
Approval GOST: POCC IT.AB24.B04512

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 5/82, shape D

General data
SIL level (SIL CL): up to SIL 3 according to EN IEC 62061
Performance Level (PL): up to PL e according to EN ISO 13849-1
Safety category: upto cat. 4 according to EN ISO 13849-1 (dependent on the solid-state output circuits)
Safety parameters: see page 7/34
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: II
Weight: 0,2 kg

Power supply
Rated operating voltage (Un): 24 Vdc
Max residual ripple in DC: 10%
Supply voltage tolerance: ±20% of Un
Rated power consumption DC: < 2 W
Start power consumption: < 3 W

Control circuit
Operating time t_A: < 40 ms
Releasing time t_{RI}: < 15 ms

In conformity with standards:
IEC 60947-1, EN 60947-5-1, 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, EN 60947-5-1, EN 62061, EN 13849-1, UL 508, CSA C22.2 n° 14-95

Output circuit
Output contacts: 3 NO safety contacts,
1 NC feedback contact
forced guided contacts
Contacts type: silver alloy, gold plated
Contacts material: 230/240 Vac; 300 Vdc
Max switching voltage: 6 A
Max switching current per contact: 6 A
Conventional free air thermal current I_{th}: 36 A²
Max currents sum Σ I_{th}²: 10 mA
Min. current: ≤ 100 mΩ
Contacts resistance: 6 A, F type
Contact protection fuse:

Code structure

CS ME-03VU24

Kind of connection		Supply voltage	
V	screw terminals	U24	24 Vdc ±15%
M	connector with screw terminals		
X	connector with spring terminals		

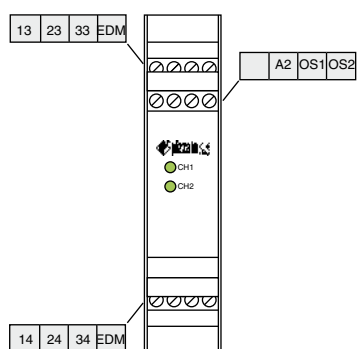
Data type approved by UL
Rated operating voltage (Un): 24 Vdc
Rated power consumption DC: < 2 W
Max switching voltage: 230 Vac
Max switching current per contact: 6 A
Utilization category: C300

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.

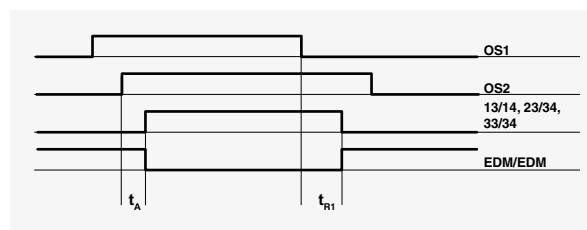


Expansion module CS ME-03

Terminals layout



Operations diagram

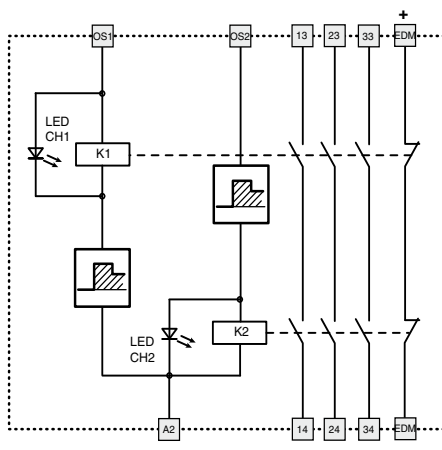


Legend:

t_A : Operating time

t_{R1} : Releasing time

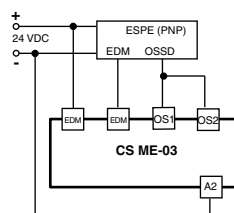
Internal wiring diagram



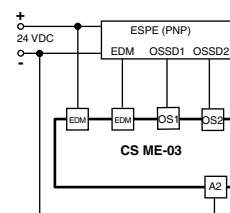
Inputs configuration

Solid-state output circuits (for example optical barriers)

1 channel



2 channels



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



Expansion module with delayed contacts at de-energizing

Main functions

- For safety applications up to SIL 3 / PL e
- Possibility of control with 1 or 2 channels
- 4 delayed time 0,5 - 1 - 2 and 3 s
- Small 22,5 mm housing
- Output contacts:
 - 4 NO safety contacts,
 - 2 NC auxiliary contact,
 - 1 NC feedback contact
- Supply voltages: 24 Vdc

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) 4

Markings, quality marks and certificates:

Approval UL: E131787

Approval GOST: POCC ITAB24.B04512

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 5/81, shape A

General data

SIL level (SIL CL): up to SIL 3 according to EN IEC 62061

Performance Level (PL): up to PL e according to EN ISO 13849-1

Safety category: up to cat. 4 according to EN ISO 13849-1 (dependent on the base module)

Safety parameters: see page 7/34

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): 2,5 kV

Rated insulation voltage (Ui): 250 V

Over-voltage category: II

Weight: 0,2 kg

Power supply

Rated operating voltage (Un): 24 Vdc

Max residual ripple in DC: 10%

Supply voltage tolerance: ±15% of Un

Rated power consumption DC: < 2 W

Control circuit

Max input resistance: ≤ 50 Ω

Operating time t_A: < 100 ms

Releasing time in absence of power supply t_R: see Code structure

In conformity with standards:

IEC 60947-1, EN 60947-5-1, 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, EN 60947-5-1, EN 62061, EN 13849-1, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts: 4 NO safety contacts,
2 NC auxiliary contact,
1 NC feedback contact
forced guided contacts

Contacts type: silver alloy, gold plated

Max switching voltage: 230/240 Vac; 300 Vdc

Max switching current per contact: 6 A

Conventional free air thermal current I_{th}: 6 A

Max currents sum Σ I_{th}²: 64 A²

Min. current: 10 mA

Contacts resistance: ≤ 100 mΩ

Contact protection fuse: 6 A, F type

Code structure

CS ME-20VU24-TF1		
Kind of connection		Releasing time on de-energisation (t _R)
V	screw terminals	TF05 fixed 0,5 s
M	connector with screw terminals	TF1 fixed 1 s
X	connector with spring terminals	TF2 fixed 2 s
		TF3 fixed 3 s

Data type approved by UL

Rated operating voltage (Un): 24 Vdc

Rated power consumption DC: < 2 W

Max switching voltage: 230 Vac

Max switching current per contact: 6 A

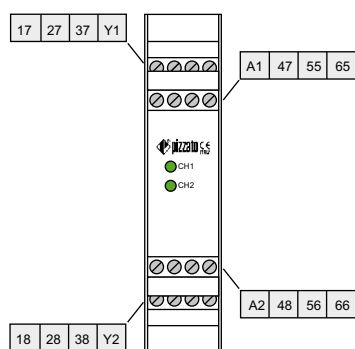
Utilization category: C300

Notes:

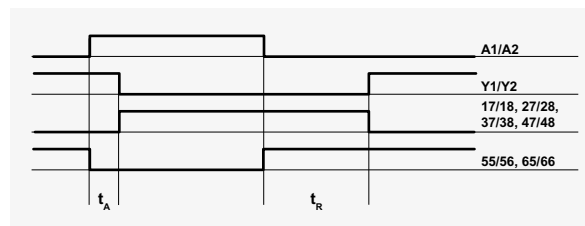
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.
- Terminal tightening torque of 5-7 Lb In.
- Supply from remote class 2 source or limited voltage and limited energy.

Expansion module CS ME-20

Terminals layout



Operations diagram

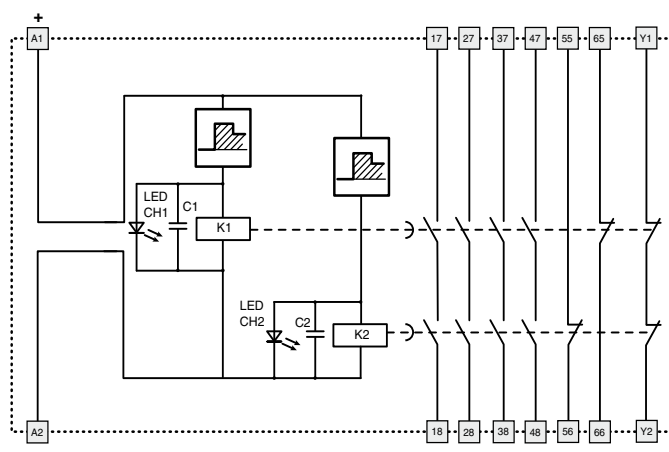


Legend:

t_A : Operating time

t_R : Releasing time in absence of power supply (see "Code structure")

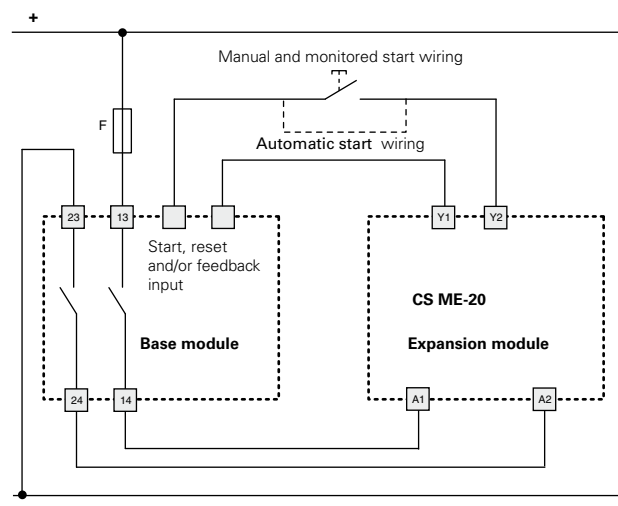
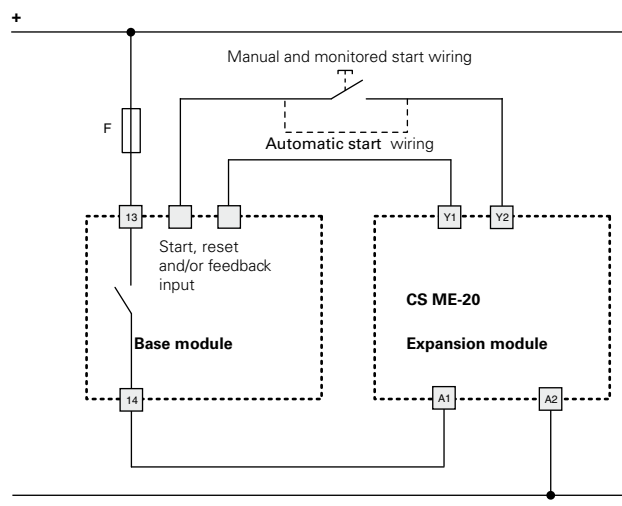
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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



Expansion module with delayed contacts at de-energizing

Main functions

- For safety applications up to SIL 3 / PL e
- Possibility of control with 1 or 2 channels
- Fixed or adjustable delayed time
- 45 mm housing
- Output contacts:
 - 4 NO safety contacts,
 - 2 NC auxiliary contact,
 - 1 NC feedback contact
- Supply voltages: 24 Vdc

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) 4

Markings, quality marks and certificates:



Approval UL: E131787
Approval GOST: POCC ITAB24.B04512

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 5/82, shape C

General data

SIL level (SIL CL): up to SIL 3 according to EN IEC 62061
Performance Level (PL): up to PL e according to EN ISO 13849-1
Safety category: up to cat. 4 according to EN ISO 13849-1 (dependent on the base module)
Safety parameters: see page 7/34
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): 2,5 kV
Rated insulation voltage (Ui): 250 V
Over-voltage category: II
Weight: 0,4 kg

Power supply

Rated operating voltage (Un): 24 Vdc
Max residual ripple in DC: 10%
Supply voltage tolerance: ±15% of Un
Rated power consumption DC: < 2 W

Control circuit

Max input resistance: ≤ 50 Ω
Operating time t_A: < 200 ms
Releasing time in absence of power supply t_R: see Code structure

In conformity with standards:

IEC 60947-1, EN 60947-5-1, 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, EN 60947-5-1, EN 62061, EN 13849-1, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts: 4 NO safety contacts,
2 NC auxiliary contact,
1 NC feedback 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 I_{th}: 6 A
Max currents sum Σ I_{th}²: 64 A²
Min. current: 10 mA
Contacts resistance: ≤ 100 mΩ
Contact protection fuse: 6 A, F type

Code structure

CS ME-30VU24-TF1

Fixed or adjustable time	
0	Fixed time
1	Adjustable time
Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Releasing time on de-energisation (t _R)	
TF1	fixed 1 s (CS ME-30 only)
...	
TF12	fixed 12 s (CS ME-30 only)
TS12	from 1 to 12 s, step 1 s (CS ME-31 only)

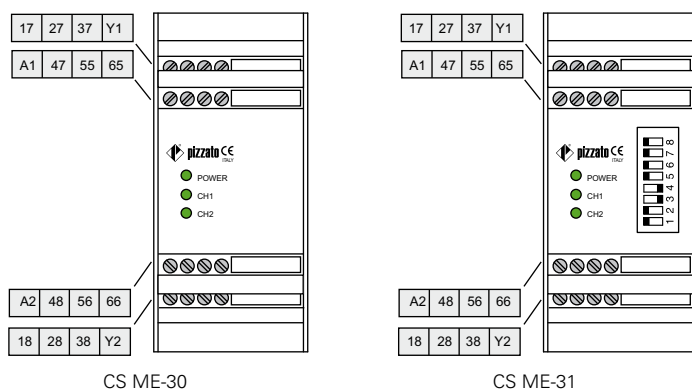
Data type approved by UL

Rated operating voltage (Un): 24 Vdc
Rated power consumption DC: < 2 W
Max switching voltage: 230 Vac
Max switching current per contact: 6 A
Utilization category: C300

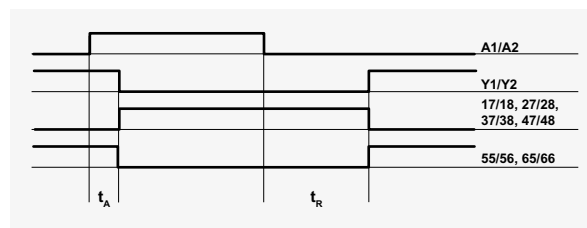
Notes:
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.
- Terminal tightening torque of 5-7 Lb In.
- Supply from remote class 2 source or limited voltage and limited energy.

Expansion module CS ME-30 / CS ME-31

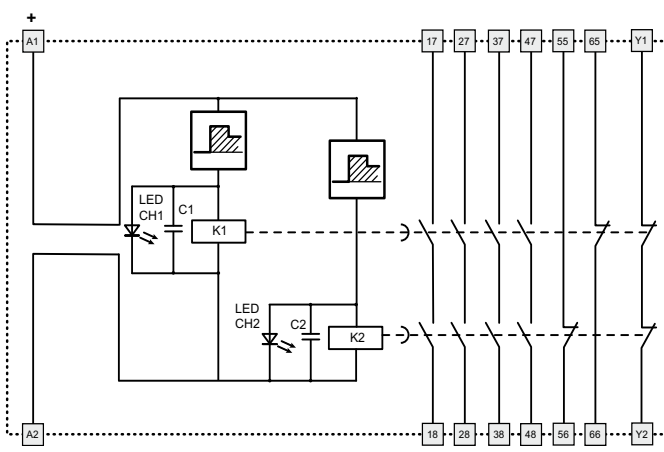
Terminals layout



Operations diagram



Internal wiring diagram



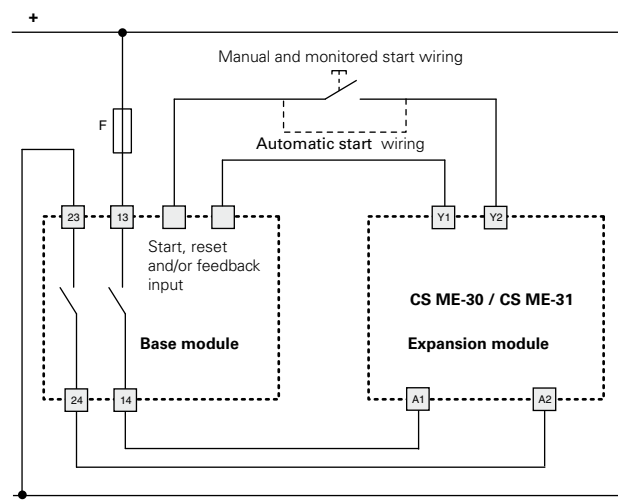
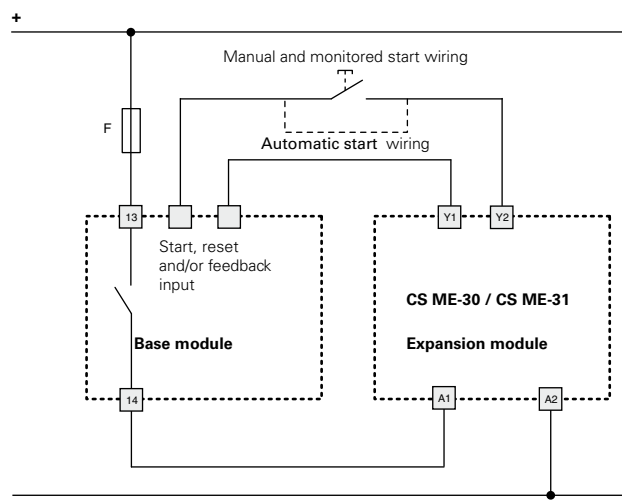
Release time selection t_R (CS ME-31 only)

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

Inputs configuration

1 channel control

2 channels control



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