



Expansion modules for 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)

U_e (V) 230I_e (A) 3

Direct current: DC13 (6 operations/minute)

U_e (V) 24I_e (A) 4**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 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 category 4 according to EN 954-1 (dependent on the base module)

Safety parameters:

see page 7/32

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 (U_{imp}):

4 kV

Rated insulation voltage (U_i):

250 V

Over-voltage category:

II

Weight:

0,3 Kg

Power supplyRated operating voltage (U_n):

24 Vac/dc; 50...60 Hz

Max residual ripple in DC:

10%

Supply voltage tolerance:

±15% of U_n

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 A²

Min. current:

10 mA

Contacts resistance:

≤ 100 mΩ

Contact protection fuse:

6 A, F type

Code structure**CS ME-01V024**

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 (U _n):	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.

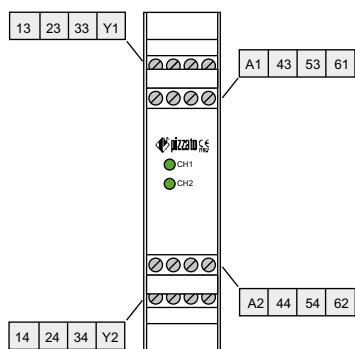
- Terminal tightening torque of 5-7 Lb In.

- Only for 24 Vac/dc version, supply from remote class 2 source or limited voltage and limited energy.

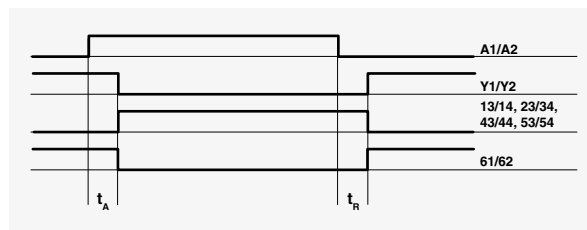


Expansion module CS ME-01

Terminals layout

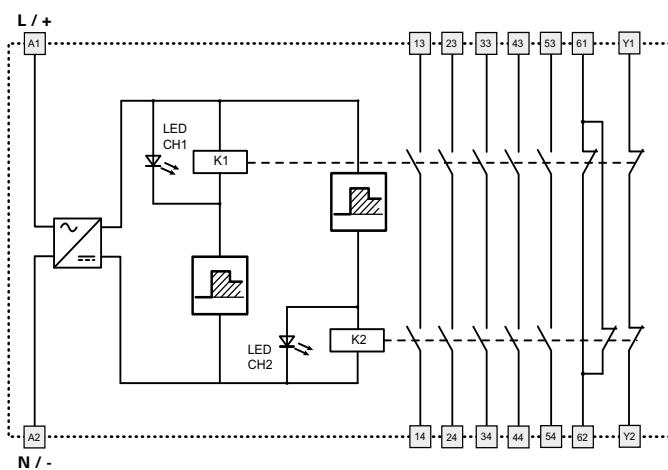


Operations diagram



Legend:
 t_A : Operating time
 t_R : Releasing time in absence of power supply

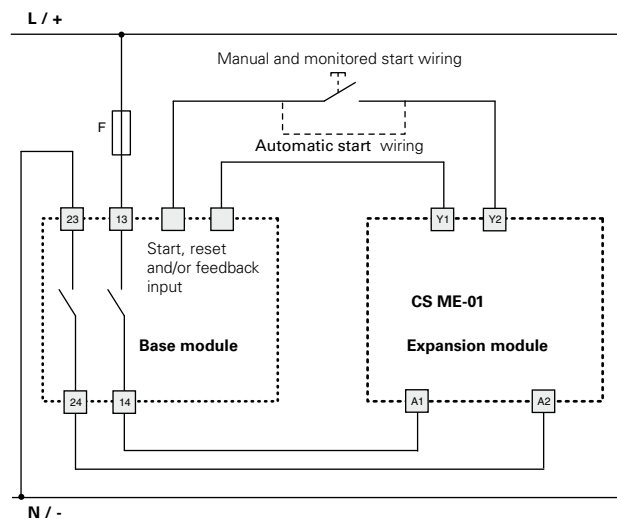
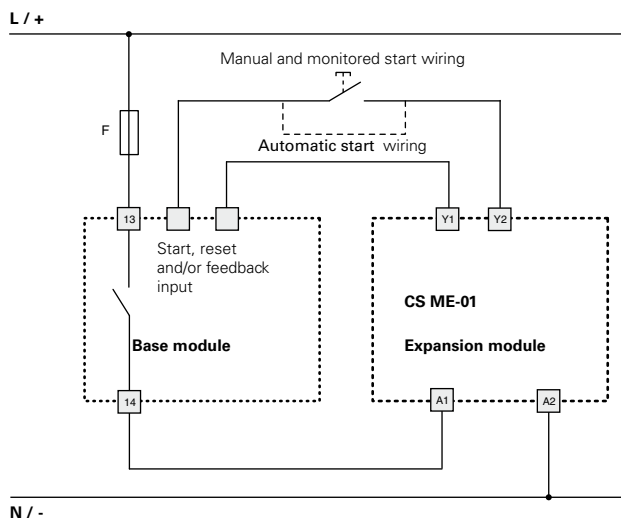
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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



Expansion modules for 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

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 category 4 according to EN 954-1 (dependent on the base module)

Safety parameters:

see page 7/32

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; 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:

< 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}²:

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 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.

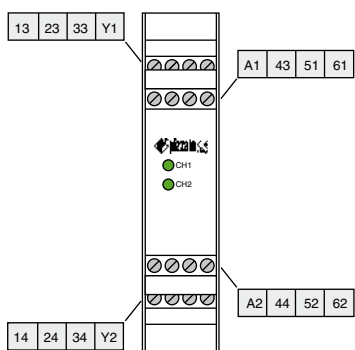
- Terminal tightening torque of 5-7 Lb In.

- Only for 24 Vdc version, supply from remote class 2 source or limited voltage and limited energy.

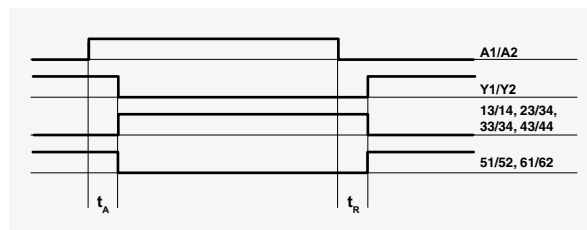


Expansion module CS ME-02

Terminals layout

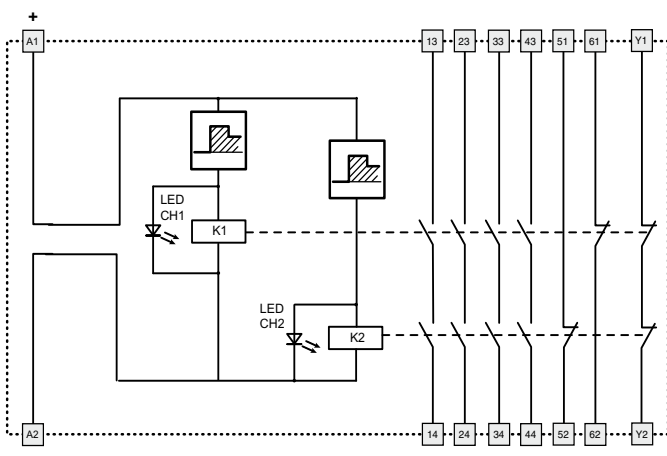


Operations diagram



Legend:
 t_A : Operating time
 t_R : Releasing time in absence of power supply

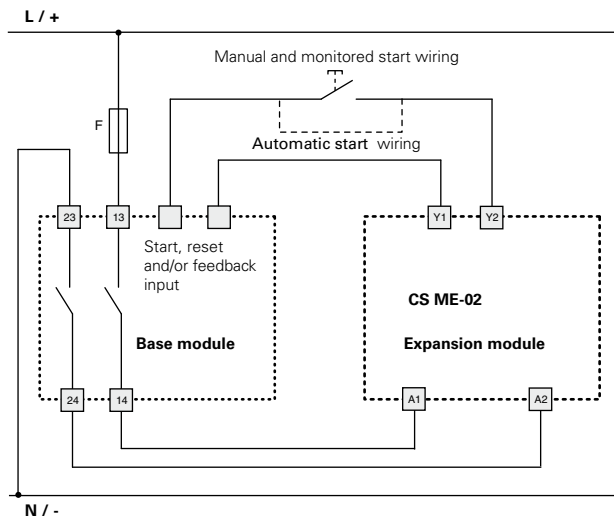
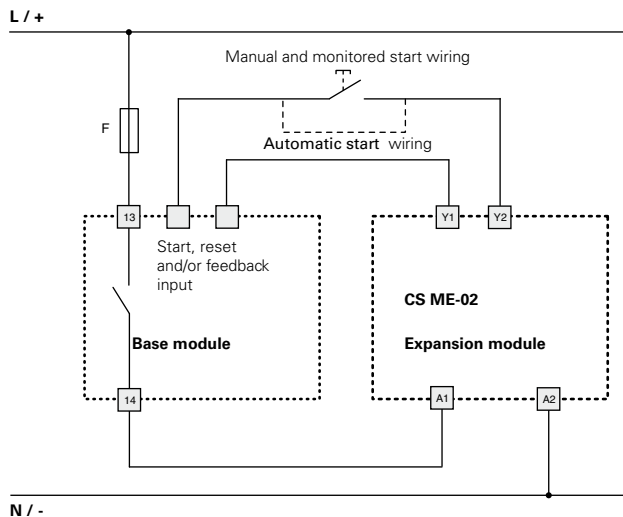
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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



Expansion modules for 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)

U_e (V) 230I_e (A) 3

Direct current: DC13 (6 operations/minute)

U_e (V) 24I_e (A) 4**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 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:

up to category 4 according to EN 954-1 (dependent on the solid-state output circuits)

Safety parameters:

see page 7/32

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 (U_{imp}):

2,5 kV

Rated insulation voltage (U_i):

250 V

Over-voltage category:

II

Weight:

0,2 Kg

Power supplyRated operating voltage (U_n):

24 Vdc

Max residual ripple in DC:

10%

Supply voltage tolerance:

±20% of U_n

Rated power consumption DC:

< 2 W

Start power consumption:

< 3 W

Control circuitOperating time t_A:

40 ms

Releasing time t_{R1}:

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

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 ΣI_{th}^2 :36 A²

Min. current:

10 mA

Contacts resistance:

≤ 100 mΩ

Contact protection fuse:

6 A, F type

Code structure**CS ME-03VU24**

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

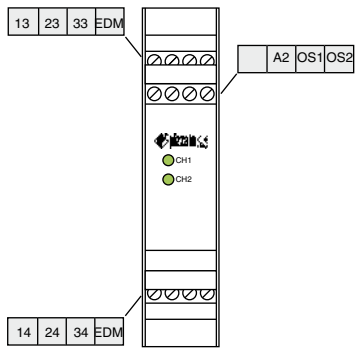
Notes:

- 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.

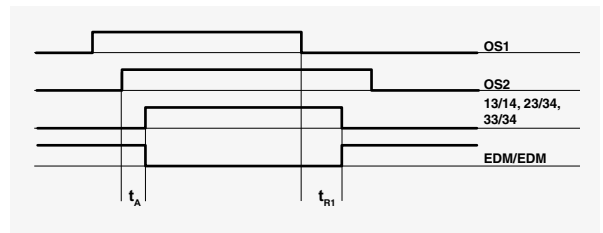


Expansion module CS ME-03

Terminals layout

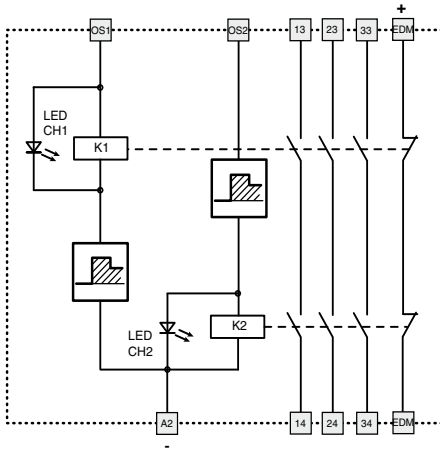


Operations diagram



Legend:
 t_A : Operating time
 t_{R1} : Releasing time

Internal wiring diagram

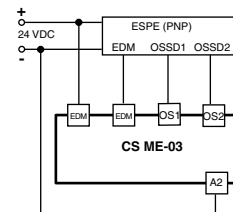
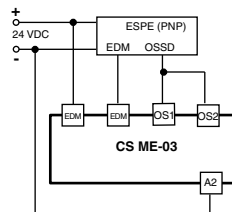


Inputs configuration

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)

U_e (V) 230

I_e (A) 3

Direct current: DC13 (6 operations/minute)

U_e (V) 24

I_e (A) 4

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 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 category 4 according to EN 954-1 (dependent on the base module)

Safety parameters:

see page 7/32

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 (U_{imp}):

2,5 KV

Rated insulation voltage (U_i):

250 V

Over-voltage category:

II

Weight:

0,2 Kg

Power supply

Rated operating voltage (U_n):

24 Vdc

Max residual ripple in DC:

10%

Supply voltage tolerance:

±15% of U_n

Rated power consumption DC:

< 2 W

Control circuit

Max input resistance:

≤ 50 Ω

Operating time t_Δ:

< 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

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

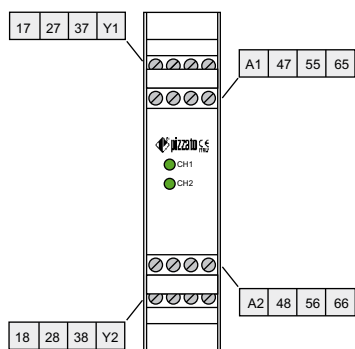
Notes:

- 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.

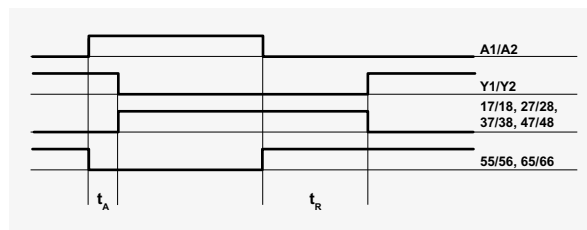


Expansion module CS ME-20

Terminals layout

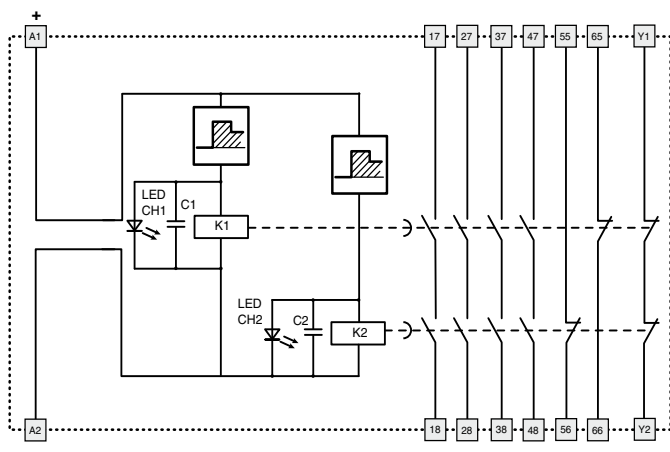


Operations diagram



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

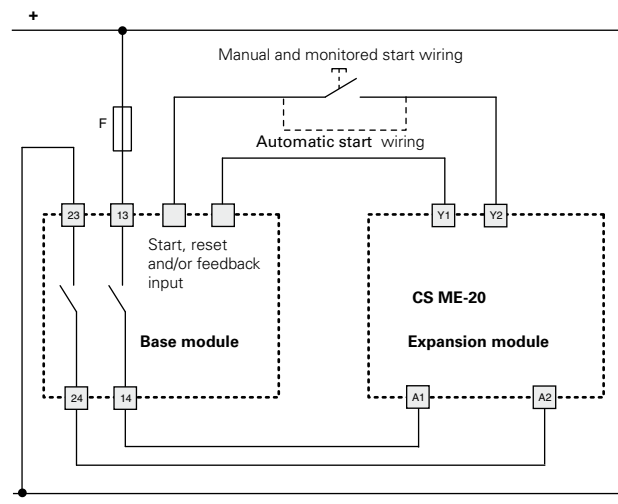
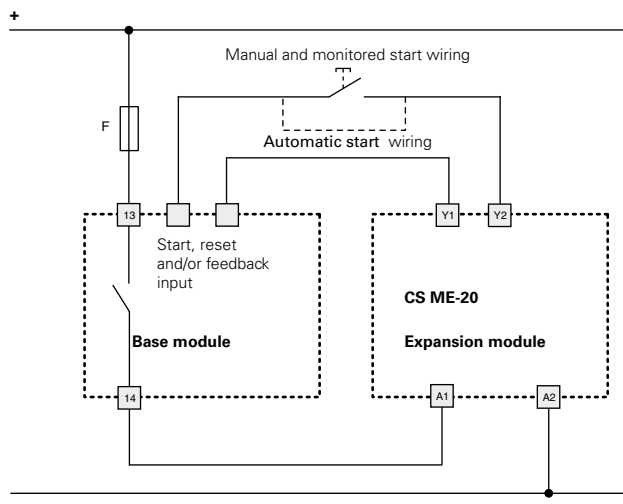
Internal wiring diagram



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)

U_e (V) 230

I_e (A) 3

Direct current: DC13 (6 operations/minute)

U_e (V) 24

I_e (A) 4

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 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 category 4 according to EN 954-1 (dependent on the base module)

Safety parameters:

see page 7/32

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 (U_{imp}):

2,5 kV

Rated insulation voltage (U_i):

250 V

Over-voltage category:

II

Weight:

0,4 Kg

Power supply

Rated operating voltage (U_n):

24 Vdc

Max residual ripple in DC:

10%

Supply voltage tolerance:

±15% of U_n

Rated power consumption DC:

< 2 W

Control circuit

Max input resistance:

≤ 50 Ω

Operating time t_α:

< 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 (U_n): 24 Vdc

Rated power consumption DC: < 2 W

Max switching voltage: 230 Vac

Max switching current per contact: 6 A

Utilization category C300

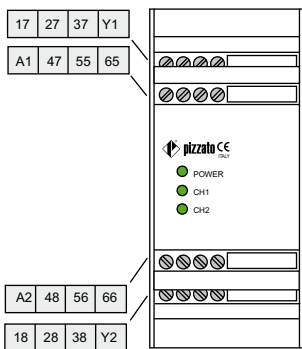
Notes:

- 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.

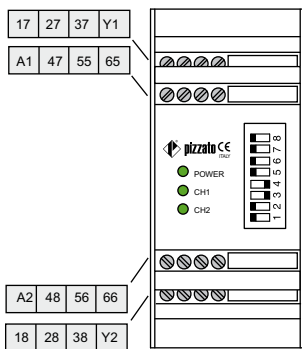


Expansion module CS ME-30 / CS ME-31

Terminals layout

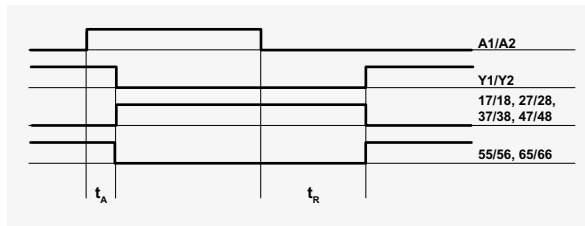


CS ME-30



CS ME-31

Operations diagram

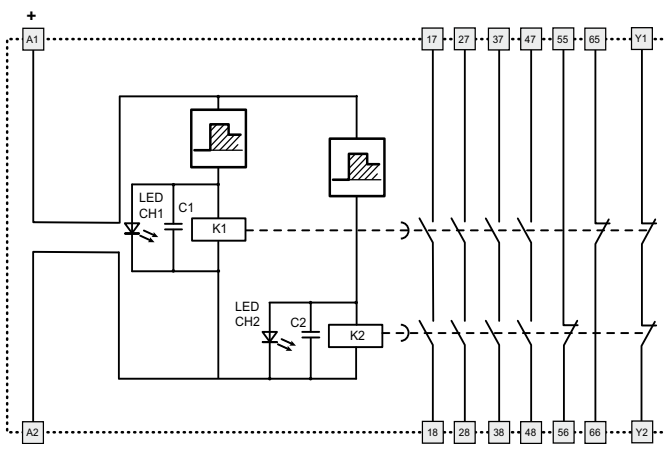


Legend:
 t_A : Operating time
 t_R : Releasing time in absence of power supply (see "Code structure")

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

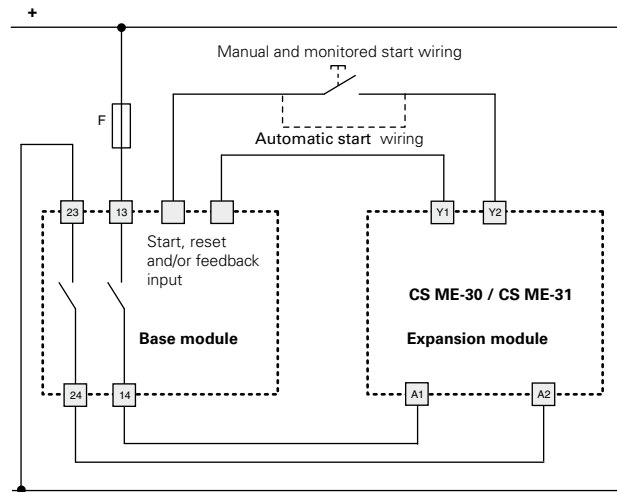
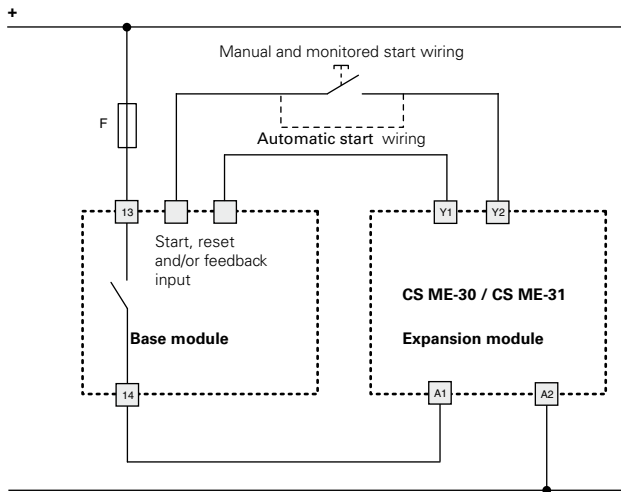
Internal wiring diagram



Inputs configuration

1 channel control

2 channels control



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