

Selection table for safety modules ESM-F

| Safety module | |
|---------------|---|
| BSN | Base unit |
| BMN | Base unit with diverse inputs |
| ISI | Input module 1-channel or 2-channel |
| IMI | Input module 2-channel with diverse inputs |
| I3I | Input module 2-channel |
| ILI | Input module 2-channel, without short circuit/earth fault/ground fault monitoring |
| OSN | Output module |
| OTN | Output module time-delayed, time adjustable |
| OT05N | Output module time-delayed, fixed time 0.5 s |

Category according to EN 954-1

K Category according to EN 954-1

Inputs

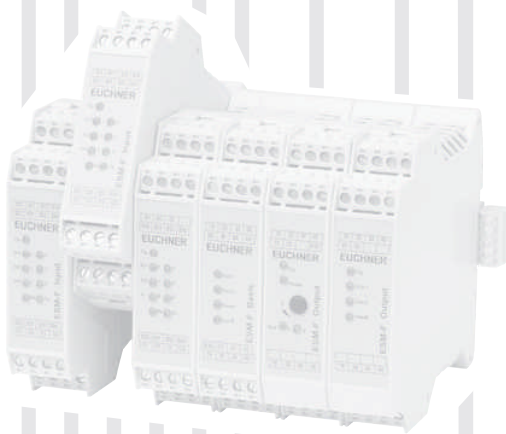
E1 1-channel
E2 2-channel

Outputs

SU Safety contacts non-time-delay
SV Safety contacts time-delay
M Monitoring outputs and auxiliary contacts
G Group outputs

Monitoring

R Feedback loop
Q Short circuit monitoring
E Earth fault monitoring
M Ground fault monitoring



| Devices | | | | | | | | | K | Inputs | | Outputs | | | | Monitoring | | | | Comment | Page | |
|---------|-----|-----|-----|-----|-----|-----|-----|-------|---|--------|----|---------|----|---|---|------------|---|---|---|---------|------------------|----|
| BSN | BMN | ISI | IMI | I3I | ILI | OSN | OTN | OT05N | | E1 | E2 | SU | SV | M | G | R | Q | E | M | | | |
| ● | | | | | | | | | | | 4 | | 2 | 3 | | 6 | ● | ● | ● | ● | | 16 |
| | ● | | | | | | | | | | 4 | | 2 | 3 | | 6 | ● | ● | ● | ● | Diverse inputs | 16 |
| | | ● | | | | | | | | | 4 | | 2 | | 2 | ● | ● | ● | ● | | | 17 |
| | | ● | | | | | | | | 6 | 4 | | 6 | | 3 | | ● | ● | ● | ● | | 17 |
| | | | ● | | | | | | | | 4 | | 3 | | 3 | | ● | ● | ● | ● | Diverse inputs | 17 |
| | | | | ● | | | | | | | 4 | | 3 | | 3 | | ● | ● | ● | ● | | 17 |
| | | | | | ● | | | | | | 4 | | 3 | | 3 | | ● | ● | ● | ● | | 17 |
| | | | | | | ● | | | | | 4 | | | 4 | | ● | | | | | | 18 |
| | | | | | | | ● | | | | 4 | | | 3 | | ● | | | | | | 18 |
| | | | | | | | | ● | | | 4 | | 4 | 1 | | ● | | | | | Time adjustable | 19 |
| | | | | | | | | | ● | | 4 | | 4 | 1 | | ● | | | | | Fixed time 0.5 s | 19 |

Output modules ESM-F-OS..

- ▶ Up to category 4 according to EN 954-1
- ▶ 3 or 4 redundant safety contacts
- ▶ 1 auxiliary contact optional
- ▶ LED status and diagnostic indicators



Function

The output modules ESM-F-OS... are operated via the base unit. The output modules can be used to directly switch power components such as contactors, motors, etc.

Depending on the version they have:

- ▶ Three or four NO contacts (each redundant and fault monitored)
- ▶ LED indicators for device status as well as the state of the inputs and outputs
- ▶ Feedback loop for contacts connected after the outputs

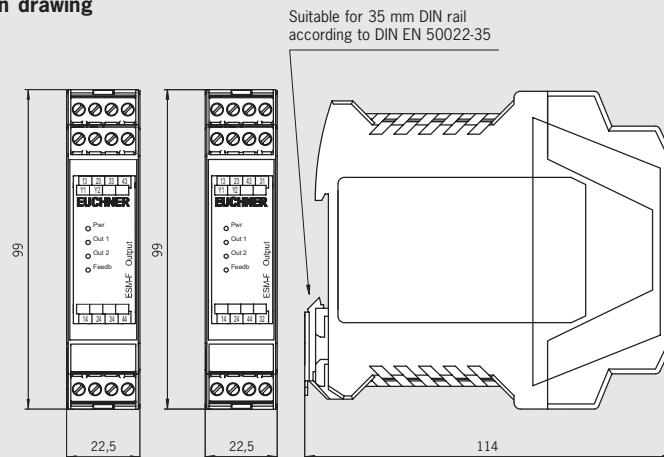
Auxiliary contact

As an option an NC contact for use as an auxiliary contact can be selected instead of an NO contact.

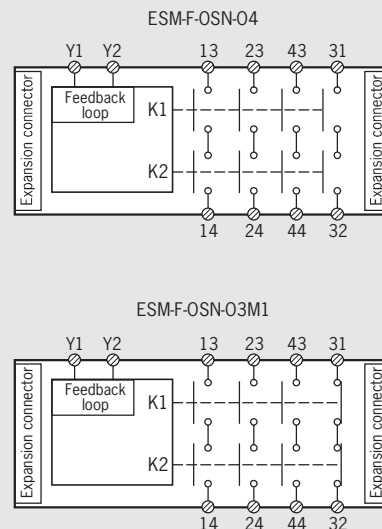
Output modules ESM-F-OS..

STOP
0 Cat.
4

Dimension drawing



Block diagram



Technical data outputs

| Parameter | Value | | |
|--|--------------------|-------|--------------|
| Minimum switching current at 24 V DC | 20 mA | | |
| Maximum switching voltage | DC 50 V / AC 250 V | | |
| Utilization category * according to EN 60947-5-1 | U_e | I_e | ΣI_e |
| | AC-12 | 250 V | 8 A |
| | AC-15 | 250 V | 3 A |
| | DC-12 | 50 V | 8 A |
| | DC-13 | 24 V | 3 A |
| | | | 10 A |

U_e = Switching voltage

I_e = Maximum switching current per contact

ΣI_e = Maximum switching current for all safety contacts (cumulative current)

* See page 29 for information about the utilization category

Important: one connection set must be ordered for each output module (see page 20).

Ordering table

| Series | Version | Outputs | 24 V DC |
|--------|----------------------|---------------------|----------------------------------|
| ESM-F | OSN Output module | O4 4 NO | 095 125 ESM-F-OSN-04 |
| | | O3M1 3 NO + 1 NC | 096 208 ESM-F-OSN-03M1 |

1) BG approval pending