Safety Delay Timer Module F238

Off-delay Extension for F200 Safety Systems

Characteristics

- ■ Stop- Category 1
- ■ Safety Category 3
- ■ 2 Safety contacts
  1 Auxiliary contact
- ■ Time ranges up to 300s,
  selectable by plug in
  terminal block jumper
- ■ Status of relays indicated
  by LEDs
- ■ 22.5mm housing

Description

*T*he **F238** is an off- delayed relay module, and is one of the series of expansion modules available for the highly flexible F200 Safety System.

The **F238** is interfaced to an F200 system via a flat-cable connector on its front face. Control commands from the Basic Module of the system to the Expansion Module, and feedback in the reverse direction are communicated through this bus interface. The Expansion Module also draws its operating power through the bus, and therefore does not require a separate power supply.

Up to two Expansion Modules can be connected to a Basic Module. A user can, for example, add an **F238** or an F230, or both, to implement a safety system to meet a specific need.

The narrow width of the Expansion Modules results in physically compact safety systems, and also makes it easier to expand systems when needed.

An optional Communication Module can be connected to the F200 System bus. The **F238** can be connected between Base and Communication Module carrying the diagnostic system data on the front bus cable.

The plug-in terminal blocks of the **F238** allow modules to be swapped quickly and conveniently, without the need to rewire the terminals for jumper-setting of the time range.

Mode of Operation

The delay time range is selected by appropriately connecting terminal rows Y3-Y8. A new delay time range becomes effective only after the F200 System is switched off and then on again. The selected delay range has a direct effect on the response time of the whole F200 System. The time delay should be checked whenever this setting is changed.

When the Basic Module activated, the internal relays of the **F238** are checked for 2-channel operation in parallel with the relays of the Basic Module, so that the safety circuits are closed.

The relay contacts are connected in series internally, so that redundancy is ensured. Reliable operation of the relays of the **F238** is ensured by relay status feedback to the Basic Module over the system bus.

An emergency stop command to the F-200 System starts the delay timing. At the end of the pre-selected delay time, the safety contacts of the **F238** open and the auxiliary contacts close.

Time-delayed operation of the relays is definite and safe in terms of time extension. It is not possible to interrupt the time delay, nor to re-start or re-trigger the system while the delay timing is active.

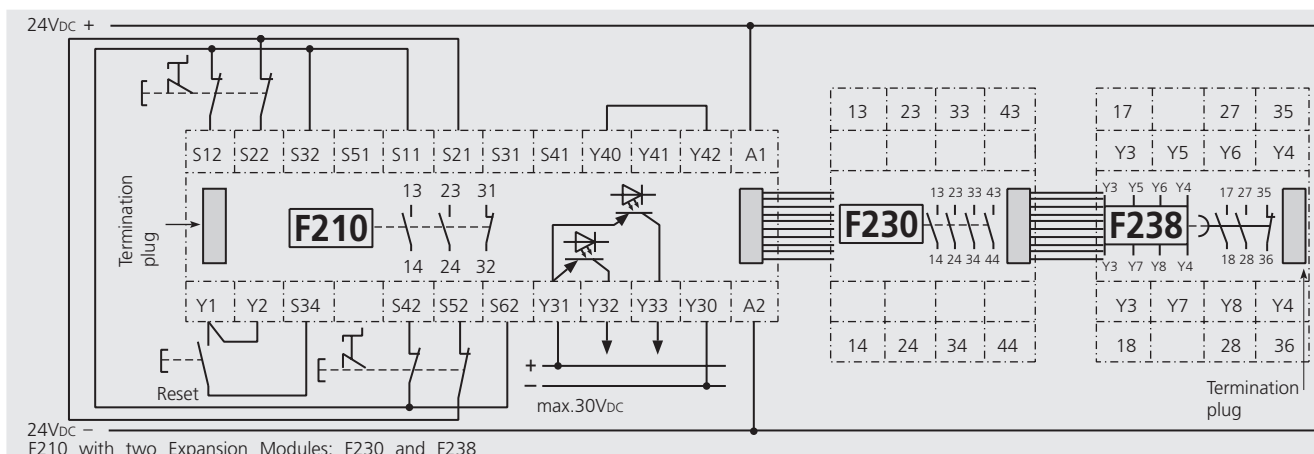A bus termination plug must be used at the last connected module in an F200 System.

The status of relays is indicated by LEDs on the front face of the module.

Models and Ordering Data

Contacts	2 N / O Safety contacts 1 N / C Auxiliary contact
Type F238	**Order No.**
24V$_{DC}$	074 00285

TÜV	c (UL) us LISTED

Wiring Example

F210 with two Expansion Modules: F230 and F238

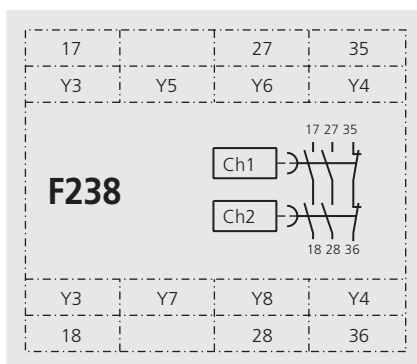## Technical Data

Rated voltage	24V$_{DC}$ via Base Module
Power consumption	Approx. 2.5W
Rated insulation voltage	250V
Creep and air paths	Overvoltage Category III, Pollution Level 2 per DIN VDE 0110
Test voltage	2.5kV
Ambient temperature	−5°C to +55°C
Storage temperature	−20°C to +70°C
Protection class	Terminals IP 20, Housing IP 40 per DIN VDE 0470- 1
Installation	in a cabinet: IP54
Switching capacity	250V$_{AC}$;1250VA/ 24V$_{DC}$; 120W, Preferably with spark suppression
Current rating I$_{th}$	max. 6A in one contact path
Utilisation category	AC-15 240V 5A; DC-13 24V 3A
Timing accuracy	±1 %
Contacts configuration	2 N/O (safety contacts) 1 N/C (auxiliary contact)
Mechanical lifetime	10^7 Switching cycles
Contacts material	AgSnO$_2$, with 2μ gold plating
Terminals	Terminal box with wire protection
Wire cross section	2.5mm^2
Contact protection	Fuse: max. 6A slow blow Circuit breaker: max. C10A quick break
Wight	Approx. 215g

Delay Time Table

The delay time is selected by jumpers (links) on the terminals according the following table. Terminals Y3 and Y8 are available on both terminal blocks.

Time/s	Jumper	Jumper
0	None	None
0.5	Y3 - Y5	None
1	Y4 - Y6	None
1.5	Y3 - Y6	None
2	Y4 - Y5	None
3	Y3 - Y5 Y4 - Y6	None
4	Y3 - Y6 Y4 - Y5	None
5	None	Y3 - Y7
6	Y3 - Y5	Y3 - Y7
7	Y4 - Y6	Y3 - Y7
8	Y3 - Y6	Y3 - Y7
9	Y4 - Y5	Y3 - Y7
10	None	Y3 - Y8
12	Y3 - Y5	Y3 - Y8
15	Y4 - Y6	Y3 - Y8
18	Y3 - Y6	Y3 - Y8
21	Y4 - Y5	Y3 - Y8
26	None	Y3 - Y8
30	Y3 - Y5	Y3 - Y8
40	Y4 - Y6	Y3 - Y8
50	Y3 - Y6	Y3 - Y8
60	Y4 - Y5	Y3 - Y8
80	None	Y4 - Y7
100	Y3 - Y5	Y4 - Y7
120	Y4 - Y6	Y4 - Y7
160	Y3 - Y6	Y4 - Y7
200	Y4 - Y5	Y4 - Y7
250	Y3 - Y5 Y4 - Y6	Y4 - Y7
300	Y3 - Y6 Y4 - Y5	Y4 - Y7

Circuit Diagram

Dimensional Diagram

DIN-rail mounting to EN 50022-35 x 7.5 (all dimensions in mm)