TERM-0001 and TERM-0002

Bus terminator for non-redundant IO (TERM-0001) and redundant IO (TERM-0002)

Description

The TERM-0001 is a bus terminator for an IOBUS-CPIO flatcable to non-redundant IO. It has 27 termination resistors (1kΩ) and links the IO bus1.x with the IO bus2.x.

The TERM-0002 is a bus terminator for two IOBUS-CPIO flatcables to redundant IO. It has 54 termination resistors (1kΩ) and keeps the IO bus1.x and the IO bus2.x separated.

The TERM-000x terminates all used IO bus signals and is placed on connectors on the Controller backplane (CPB-0001). These connectors are labelled Term IO bus1, Term IO bus2, Term IO bus3 and Term IO bus4.
The presence of a bus terminator on the CP backplane is checked by the software and required for all used IO busses.

Figure 291 on page 485 shows the terminator.

Figure 292 on page 486 shows a detail of the CP-backplane with an TERM-0002 placed.

Figure 291 Front and back view of the TERM-0001

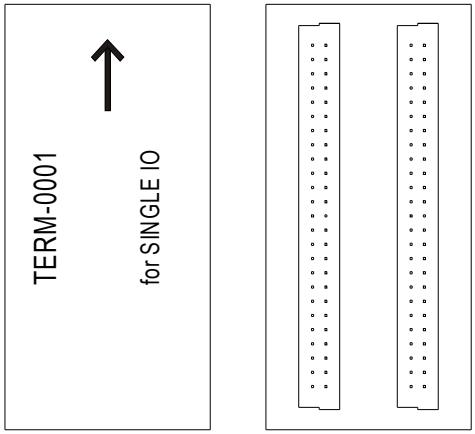
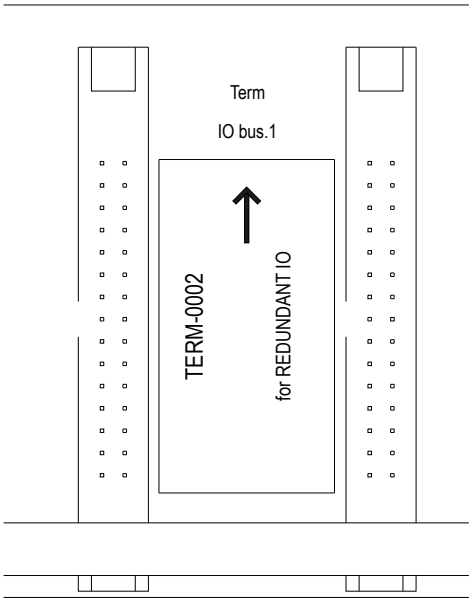


Figure 292 CP backplane detail with an TERM-0002 placed



Choosing the correct terminator

Table 68 on page 486 describes which terminator to use for which configuration.

Table 68 Correct terminator placement for various configurations

Controller	IO	Terminator
Non-redundant	Non-redundant	TERM-0001
Redundant	Non-redundant	TERM-0001
Redundant	Redundant	TERM-0002

Technical data

General	Type numbers[1] :	FS-TERM-0001 for non-redundant IO FS-TERM-0002 for redundant IO
		FC-TERM-0001 for non-redundant IO FC-TERM-0002 for redundant IO
	Approvals:	CE, TUV, UL, CSA, FM
Power	Power requirements:	50 mA (from 5 Vdc of Control Processor)
Physical	Module dimensions:	19.7 × 38.1 × 7.8 mm (0.78 × 1.5 × 0.3 in)
	Weight:	Approximately 4.5 g (0.16 oz)
	Connectors:	2 × SMC female connector, 50-pins

1 FS-type modules are non conformal coated modules.
FC-type modules are conformal coated modules.

IO-0002

IO Extender Module (Safety Manager A.R.T.)

Description

The IO extender module is a basic module that is installed in the IO chassis at positions 20 and 21.
The IO extender module transfers the communication of the Control Processor to the IO modules.

The IO extender module transfers:

- the WatchDog signals of the Control Processors to each IO module position in the IO-chassis.
  This makes it possible to isolate each individual output module in case of an error on that output module (the Watchdog signal of that IO-module is switched off).
- the 5V of the Control Processor chassis to the IO-modules in the IO chassis.
  This is done in two groups.
  In case of a short (or an overload) in a group, the 5V to that group is switched off while the rest of the system continues to control the process.

In redundant IO chassis:

- 5V group 1 supplies the IO chassis positions 1, 3, 5, 7, 9, 11, 13, 15 and 17
- 5V group 2 supplies the IO chassis positions 2, 4, 6, 8, 10, 12, 14, 16 and 18.

In non-redundant IO chassis:

- 5V group 1 supplies the IO chassis positions 1 thru 9
- 5V group 2 supplies the IO chassis positions 10 thru 18.

The IO extender has a status LED (OFF, GREEN or RED) that indicates the module status.

Each Safety Manager A.R.T. IO chassis has two IO extender modules:

- The IO extender module at position 20 is connected to IO bus1.
- The IO extender module at position 21 is connected to IO bus2.

Note

An IO extender module can be replaced when the power is switched on and the system is controlling the process, provided the other IO extender module in the IO chassis is running without fault.

Address settings

The chassis address of the IO extender is defined by means of jumpers (CA0, CA1, CA2, CA3) on the IO backplane.

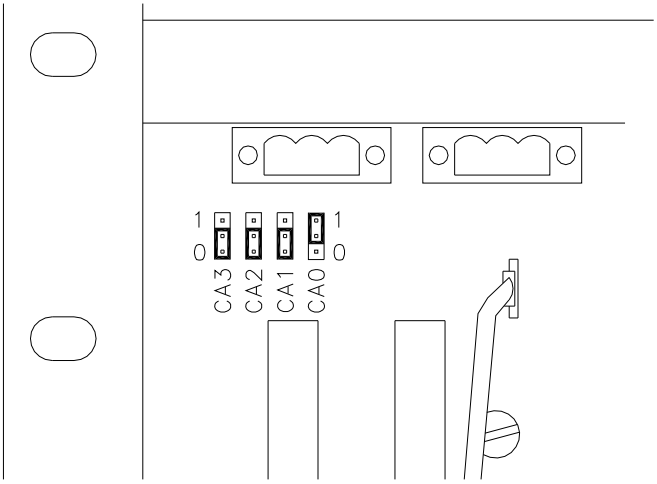
Table 69 on page 489 shows the jumper settings for the possible chassis addresses. Figure 293 on page 489 shows the jumper locations on the IO-backplane (with chassis address 1 selected).

Table 69 Address settings for the IO-0002

Chassis address	Jumper setting[1]			
	CA3	CA2	CA1	CA0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	1	0	0	0
8	1	0	0	1
9	1	0	1	0

1 **0** and **1** positions are marked on the IO backplane
0 = GND 5 Vdc
1 = not connected

Figure 293 Adress jumpers on the IO backplane



Technical data

The IO-0002 module has the following specifications:

General	Type numbers[1]:	FC-IO-0002
	Approvals:	CE; TUV, UL, CSA pending
	Space requirements:	4 TE, 3 HE (= 4 HP, 3U)
Watchdog	Number of inputs: • current:	2 max. 10 mA (WD1in + WD2in)
	Number of outputs: • current:	18 max. 25 mA
Power	Number of inputs: • power requirements: • current:	2 (diode OR-ed) 5Vdc 100 mA + 5V_load of all (18) IO boards + WD_load of all (18) IO boards
	Number of outputs: • voltage drop: • current:	2 groups 0.2V < V < 0.8V (versus highest Vin) > 1.25 Amp (per group)

1 FC-type modules are conformal coated modules. Conformal coated modules have the letters "CC" preceding the version number.