# FTA-T-15 24 Vdc to 30 Vdc/1 A converter

## Description

The FTA-T-15 module is a DC/DC converter, which is used to provide an isolated 30 Vdc / 1 A to other field termination assemblies (FTAs), e.g. the analog input FTA module FTA-T-14 or the active analog input FTA module FTA-T-16. It has voltage monitoring capabilities with local LED indication and also provides alarm functions (readback relay contact). The LED is on and the relay contact is closed if the local DC/DC output voltage is OK.

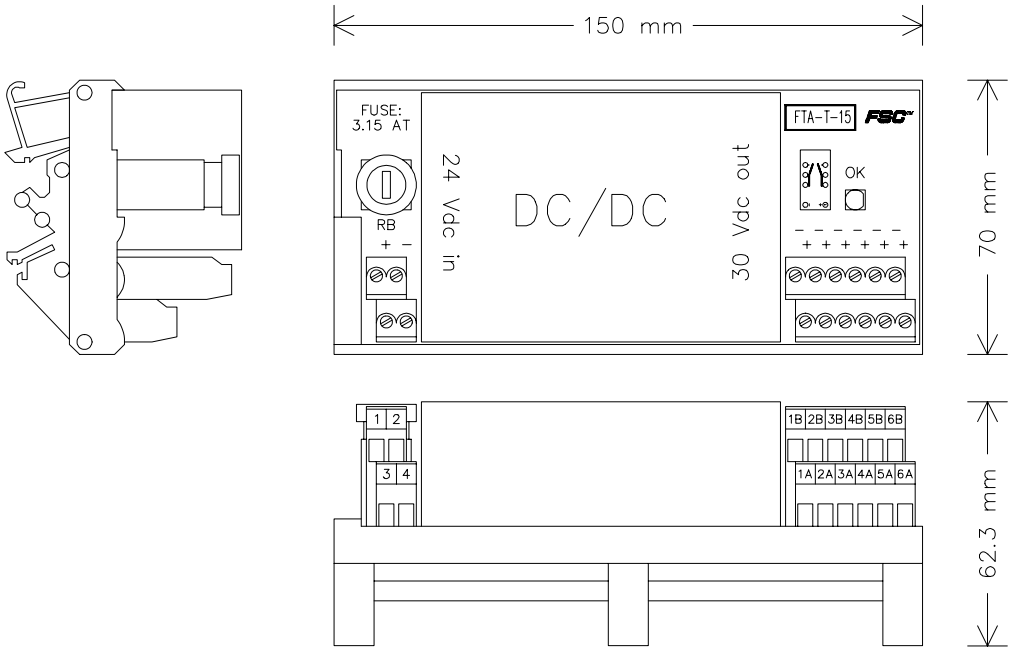


Figure 1 Mechanical layout

## Applications

For details on applications and connection options for the FTA-T-15 module refer to the 'SIC to FTA applications' data sheet.

## Connections

The FTA-T-15 module has four screw terminals for connection of incoming power wires and the readback wiring. The screw terminals are numbered 1 to 4. The function of each terminal is listed below:

| Screw terminal | Function |
|---|---|
| 1 | Readback contact |
| 2 | Readback contact |
| 3 | 24 Vdc IN + |
| 4 | 24 Vdc IN – |

**Note:**
Removal or connection of the 24 Vdc IN+ and/or 24 Vdc IN– wire(s) is only allowed when the 24 Vdc power supply to the FTA-T-15 module has been switched off.

The FTA-T-15 module has twelve screw terminals for connection of outgoing power wires. The screw terminals are numbered '1A', '1B', '2A', etc. to '6B'. The function of each terminal is listed below:

| Screw terminal | Function |
|---|---|
| 1A | 30 Vdc OUT |
| 1B | 0 Vdc OUT |
| 2A | 30 Vdc OUT |
| 2B | 0 Vdc OUT |
| 3A | 30 Vdc OUT |
| 3B | 0 Vdc OUT |
| 4A | 30 Vdc OUT |
| 4B | 0 Vdc OUT |
| 5A | 30 Vdc OUT |
| 5B | 0 Vdc OUT |
| 6A | 30 Vdc OUT |
| 6B | 0 Vdc OUT |

## Technical data

The FTA-T-15 module has the following specifications:

| | | |
|---|---|---|
| **General** | Type number: | FTA-T-15 |
| | Approvals: | CE, UL, TÜV approvals pending |
| | Safety class: | AK1-6 |
| | MTBF: | approx. 400,000 hours |
| **Input** | Nominal input voltage: | 24 Vdc |
| | Input voltage range: | 18 to 36 Vdc |
| | Inrush current: | ≤ 4 A *(see note below)* |
| **Output** | Output voltage: | 30 Vdc, ± 0.25 V |
| | Output current: | 1 A (short-circuit proof) |
| | Short-circuit current: | < 3.3 A |
| | Ripple (0-30 MHz): | < 0.1 Vrms |
| | Regulation: | < 1% (load + line) |
| | Transient response: | class C according to NFC42801C |
| | Power-on overshoot: | output ≤ 31 V |
| | Long-term stability (after 30 min. operation): | < 0.3% |
| | Efficiency: | > 75% |
| | Switching frequency: | > 25 kHz |
| **Physical** | Module dimensions: | 150 x 70 x 62.3 mm (L x W x H)<br>5.91 x 2.76 x 2.45 in (L x W x H) |
| | DIN EN rails: | TS32 / TS35 x 7.5 |
| | Used rail length: | 151 mm (5.94 in) |
| **Fuse** | Rating: | 3.15 AT (slow-acting) |
| | Dimensions: | 5 x 20 mm (0.2 x 0.79 in) |

**Note:**
The inrush current limiter is only active at power-on.
To regain the inrush current limiting function, the FTA-T-15 module must be switched off for at least 30 seconds. Switching on the module within 30 seconds may blow a fuse or activate a circuit breaker.

## Technical data (continued)

| | | |
|---|---|---|
| **Termination** | Screw terminals: | |
| | – max. wire diameter | 2.5 mm² (AWG 14) |
| | – strip length | 7 mm (0.28 in) |
| | – tightening torque | 0.5 Nm (0.37 ft-lb) |
| **Isolation** | Isolation voltage: | |
| | – input to output | 2000 Vac (1 min.) |
| | – input to relay contact | 2000 Vac (1 min.) |
| | – output to relay contact | 2000 Vac (1 min.) |
| **Environment** | Operating temperature: | –5°C to +70°C (23°F to 158°F) |
| | Storage temperature: | –40°C to +85°C (–40°F to +185°F) |
| | Cooling: | natural convection |
| **Alarm functions** | Overvoltage protection: | dual, two-fault-tolerant |
| | Restart overvoltage protection: | only after removal of 24 Vdc power |
| | Undervoltage detector: | LED on if voltage OK, readback relay contact closed if voltage OK |
| | Undervoltage level: | typically 27.5 Vdc |
| **Readback** | Relay contact rating: | 36 Vdc / 40 mA, 30 Vac / 40 mA |