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# ОПЦИИ ДЛЯ РАСШИРЕНИЯ ФУНКЦИОНАЛА ПРИВODOB Техническое описание на модули термисторной защиты FPTC



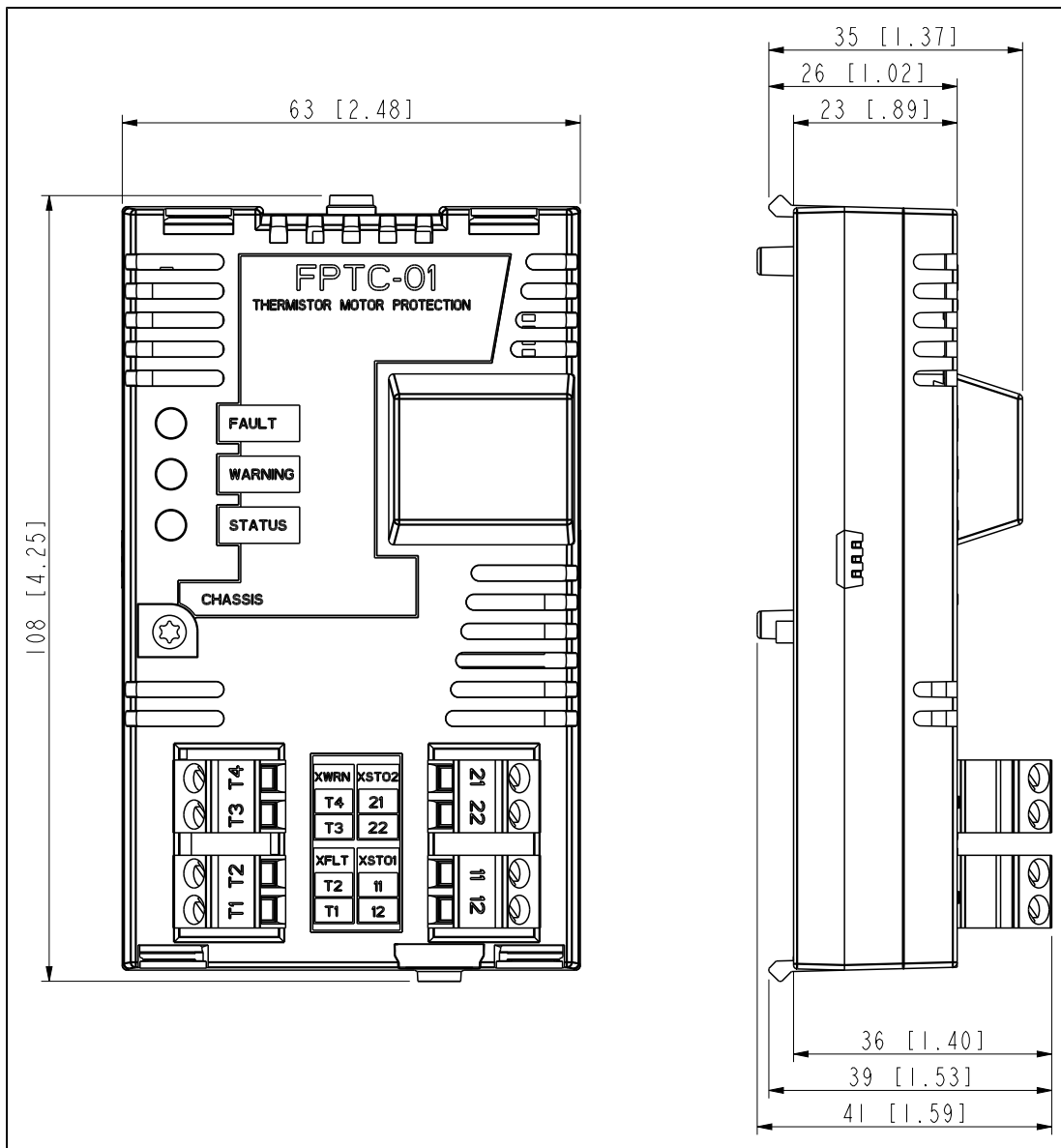
## FPTC-01 thermistor protection module (option +L536) for ACS880 drives

User's manual

### 74 Technical data

#### Dimension drawing

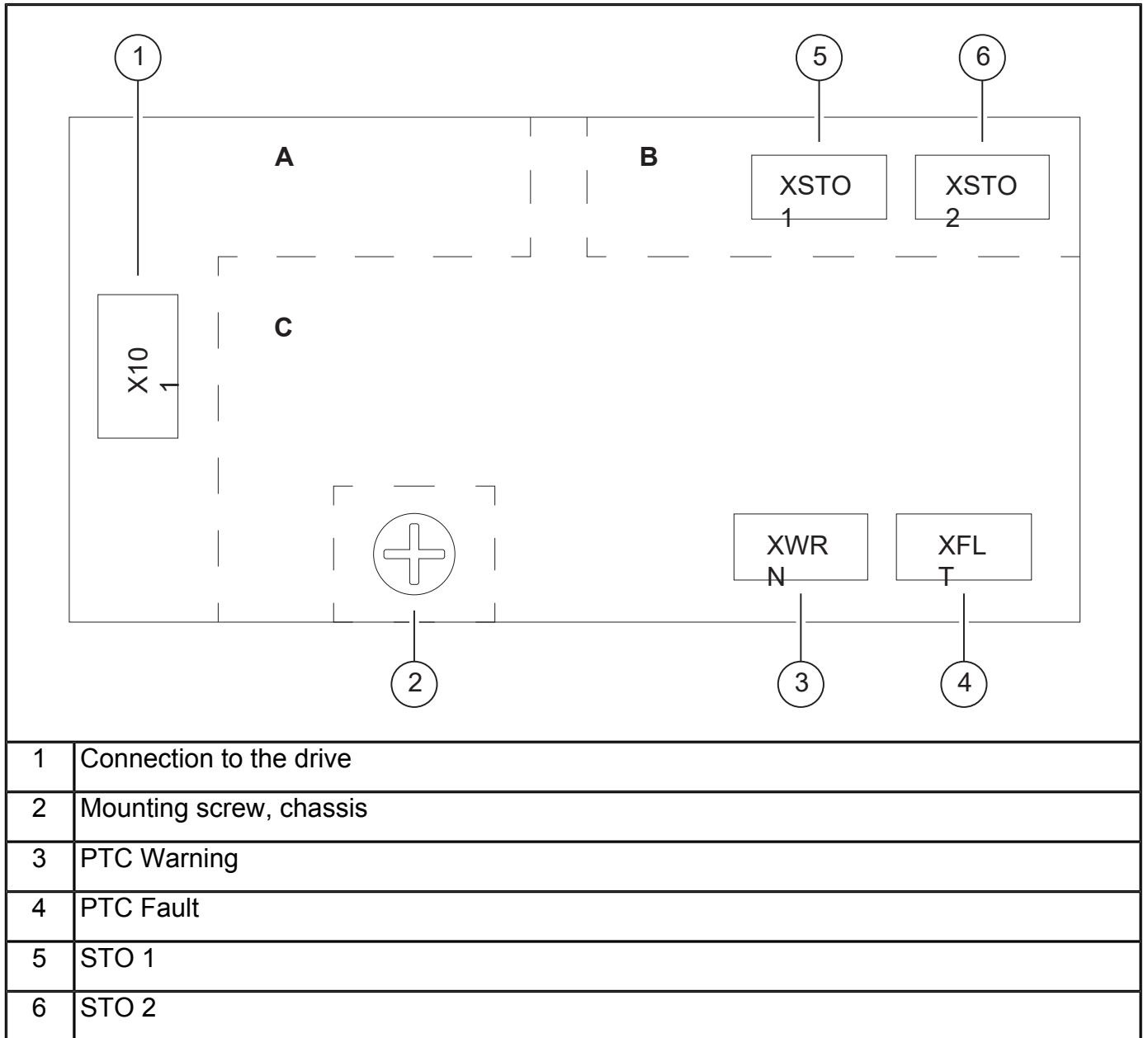
The dimensions are shown in millimeters and inches.



#### Isolation areas

The following figure shows the different isolation areas of the module. Isolation areas A and B and the mounting screw are connected to

ground. Isolation area C is in the same potential as the PTC sensor element in the motor.



There is reinforced insulation between:

- isolation areas A and C
- isolation areas B and C.

5. FPTC module + drive STO + FSO module with STO function

request, one-channel configuration. See [Wiring example 5 \(page 44\)](#) .

	>90	>90	>90	>60	>60	One-channel configurations	
	Two-channel configurations						
Configuration	1	2	3	4	5	4	5
SIL / SILCL	2	2	2	1	1		
PL	c	c	c	c	c		
SFF (%)							
PFH (1/h) T <sub>1</sub> = 20 a	5.48E-09	5.54E-09	5.48E-09	7.68E-09	8.25E-09		
PFH (1/h) T <sub>1</sub> = 20 a <del>1697 years (two channel connection)</del>							
PFH (1/h) T <sub>1</sub> = 2 a <del>1703 years (one channel connection)</del>	4.81E-05	4.88E-05	4.81E-05	7.84E-05	8.39E-05		
PFH (1/h) T <sub>1</sub> = 5 a	1.20E-04	1.22E-04	1.20E-04	1.97E-04	2.10E-04		
DC (%)	60	60	60	0	0		
SC	2	2	2	2	2		
Cat.	1	1	1	1	1		
HFT	0	0	0	0	0		
CCF	65	65	65	65	65		
T <sub>M</sub> (a)	20	20	20	20	20		
3AXD10000454332 F							

The MTTFD value (EN ISO 13849-1) of the FPTC-01 module:

### Safety block diagrams

The components that are included in the safety data calculations are shown in the safety block diagrams below. The dashed line identifies a component that is not included in the safety data calculations shown in this manual.

**Note:** The failure rate of the PTC sensor is not included in the calculations.

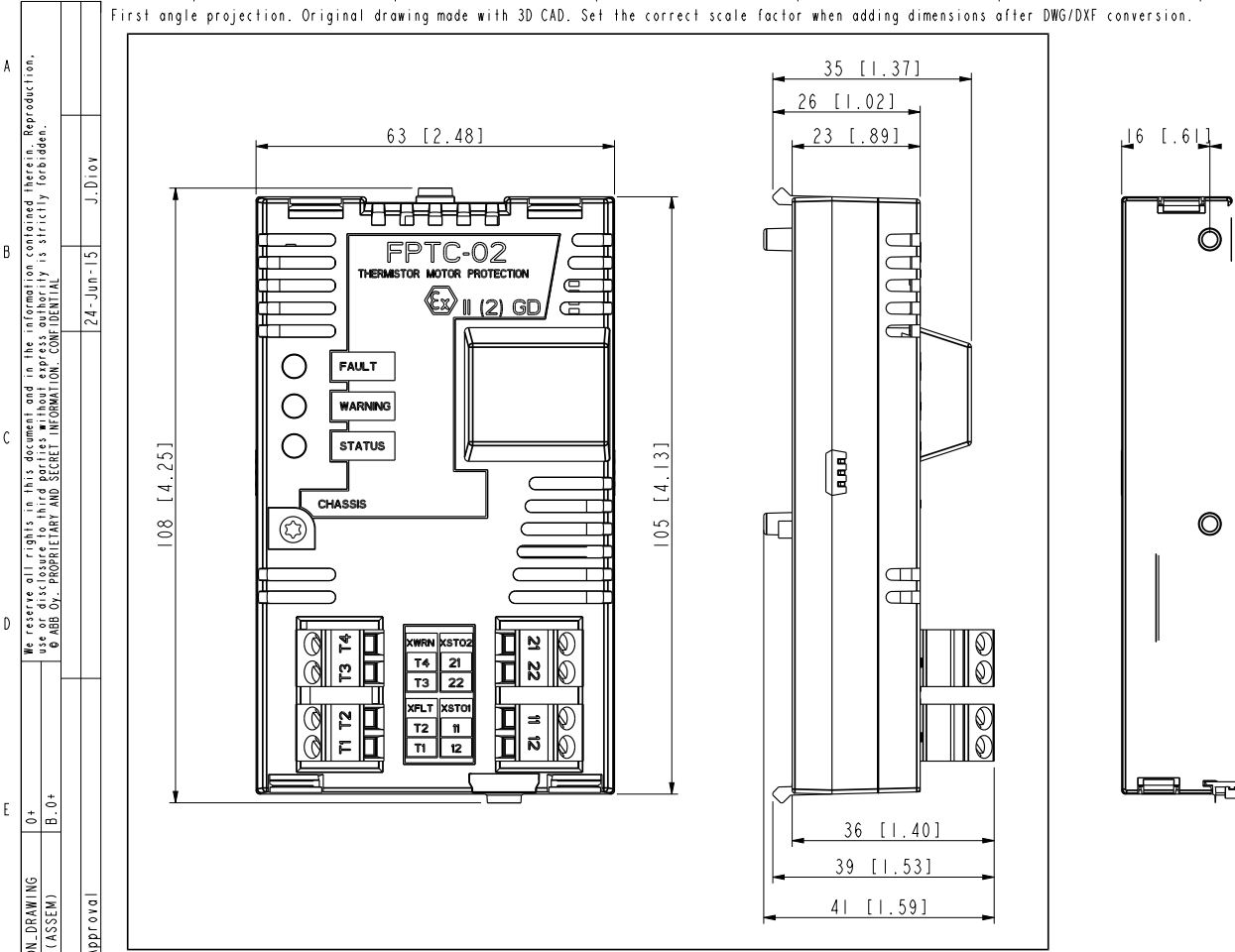
# FPTC-02 ATEX-certified thermistor protection module, Ex II (2) GD (option+L537+Q971) for ACS880 drives User's manual



## Dimension drawing

The dimensions are shown in millimeters and inches.

First angle projection. Original drawing made with 3D CAD. Set the correct scale factor when adding dimensions after DWG/DXF conversion.



### Isolation areas

The following figure shows the different isolation areas of the module.

Isolation areas A and B and the mounting screw are connected to

FPTC-02-DIMENSION-DRAWING	0+	Initial Approval	24-Jun-15	J.Diov
	B.0+			
3AXD50000017196 (ASSEM)				
Customer				
DMS Number				

Prepared	J.Diov	24-Jun-15	Title	ASSEMBLY DRAWING
Check.		24-Jun-15		
Appr.		24-Jun-15		
Weight	kg	0.24		



Doc. des.  
ASSEMBLY  
Resp. dept.  
Doc. No.

## Connections

### ■ Motor thermistor connection

- Maximum wire size: 2.5 mm<sup>2</sup> (14 AWG)
- Maximum wire length: 700 m (2300 ft) (1400 m [4600 ft] for the whole loop)  
With the specified cable type, detection of a short-circuited PTC sensor or cable is not guaranteed after 100 m (328 ft).
- Type: Shielded, twisted-pair cable (Draka JAMAK 1×(2+1)×0.5 mm<sup>2</sup> or equivalent)
- Tightening torque: 0.5 N·m (4.4 lbf·in)
- Supported standards: DIN 44081 and DIN 44082
- Number of PTC thermistors: 1, 3 or 6 in series (in both inputs)
- Triggering threshold: 3.6 kohm ±10%
- Recovery threshold: 1.6 kohm ±10%
- PTC terminal voltage: < 5.0 V

- PTC terminal current: < 1 mA
- Short-circuit detection: < 50 ohm ±25 ohm (for the effect of the cable length, see above).

### ■ STO output connection

- Maximum wire size:
  - 2.5 mm<sup>2</sup> (14 AWG) without FSO module
  - 1.5 mm<sup>2</sup> (16 AWG) with FSO module
- Maximum wire length: 30 m (98 ft) for the whole loop
- Tightening torque: 0.5 N·m (4.4 lbf·in)

5. FPTC module + drive STO + FSO module with STO function

request, one-channel configuration. See [Wiring example 5 \(page 50\)](#) .

	Two-channel configurations			One-channel configurations	
Configuration	1	2	3	4	5
SIL / SILCL	2	2	2	1	1
PL	c	c	c	c	c
SFF (%)					
PFH (1/h) T <sub>1</sub> = 20 a	5.48E-09	5.54E-09	5.48E-09	7.68E-09	8.25E-09
• PFD <sub>avg</sub> T <sub>1</sub> = 1697 years (two-channel connection)	4.81E-05	4.88E-05	4.81E-05	7.84E-05	8.39E-05
• T <sub>1</sub> = 1703 years (one-channel connection)					
PFH (1/h) T <sub>1</sub> = 5 a	1.20E-04	1.22E-04	1.20E-04	1.97E-04	2.10E-04
DC (%)	60	60	60	0	0
SC	2	2	2	2	2
Cat.	1	1	1	1	1
HFT	0	0	0	0	0
CCF	65	65	65	65	65
T <sub>M</sub> (a)	20	20	20	20	20
3AXD10000454332 F					

The MTTF<sub>D</sub> value (EN ISO 13849-1) of the FPTC-02 module:

### Safety block diagrams

The components that are included in the safety data calculations are shown in the safety block diagrams below. The dashed line identifies a component that is not included in the safety data calculations shown in this manual.

**Note:** The failure rate of the PTC sensor is not included in the calculations.

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