

VLT® PTC Thermistor Card MCB 112



With the new MCB 112 PTC Thermistor Card, the Danfoss VLT® AutomationDrive FC 302 now offers improved surveillance of the motor condition compared to the built-in ETR function and thermistor terminal.

The option is ATEX certified for protection of certified Ex proof motors, regardless of supplier, in Zone 1 and 2 (Gas) and Zone 21 and 22 (Dust), in accordance with the dedicated additional measures of the motor's Ex protection system.

The option is a standard plug-in B-option for the VLT® AutomationDrive, automatically detected by the drive and operated with or without the dedicated parameter set-up.

Alarm handling

As an integrated part of the drive, the VLT® AutomationDrive gives the correct diagnosis based on intelligent evaluation, and thus facilitates trouble shooting - utilising the graphical control panel display of the VLT® AutomationDrive. The status is detected, alarms are logged, short-circuits and breaks in the sensor circuit are detected.

The perfect solution for:

- Applications in potentially explosive atmospheres, created by the presence of flammable gases, vapours, mists or dust
- Connection and monitoring of PTC sensors according to DIN 44081 and DIN 44082
- Protection of EEx-d motors regardless of supplier, in Zone 1 and 2 (Gas) and Zone 21 and 22 (Dust)
- All Danfoss VLT® AutomationDrive FC 302 in the power range 0.25 kW – 1.2 MW



The motor protection provided by the VLT® PTC Thermistor Card is useful also in installations not affected by the ATEX directive.

Features	Benefits
<ul style="list-style-type: none"> • Independent of motor supplier 	<ul style="list-style-type: none"> • Flexibility
<ul style="list-style-type: none"> • No binding between the different components 	<ul style="list-style-type: none"> • Easy service
<ul style="list-style-type: none"> • Temperature surveillance is realised directly in the frequency converter 	<ul style="list-style-type: none"> • No external components needed • Less space required • Reduced system cost
<ul style="list-style-type: none"> • Can assume sole protection of an EEx-d motor within the installation/facility 	<ul style="list-style-type: none"> • External components saved
<ul style="list-style-type: none"> • Integrated safety technology 	<ul style="list-style-type: none"> • Reduced cabling and commissioning cost
<ul style="list-style-type: none"> • Plug-and-play 	<ul style="list-style-type: none"> • Swift and cost efficient upgrade on-site • The drive automatically identifies the option
<ul style="list-style-type: none"> • Isolated solution (PELV) 	<ul style="list-style-type: none"> • Digital outputs are galvanically isolated from supply and high-voltage

Integrated Safe Stop function

The thermistor card uses the Safe Stop function of the drive which is approved in accordance with Cat. 3 EN954-1. A mains disconnect contactor is not necessary.

The Safe Stop function can be used with external safety devices at the same time as with the PTC thermistor card.

Collaboration

The PTC Thermistor Card has been developed in collaboration with the company ZIEHL industrie-elektronik, an experienced specialist in thermal motor protection in explosion-hazardous areas.

PTC-thermistor connection

PTC compliant with DIN 44081, DIN 44082	
Numbers	Set with 3 ...6 resistors in series
Cut-out-point	3.3 kΩ ... 3.65 kΩ ... 3.85 kΩ
Reclosing point	1.7 kΩ ... 1.8 kΩ ... 1.95 kΩ
Collective resistance cold sensors	< 1.65 kΩ
Terminal voltage (sensors)	≤ 2.5 V for R ≤ 3.65 kΩ, ≤ 9 V for R = ∞
Terminal current (sensors)	≤ 1 mA
Short circuit	20 Ω ≤ R ≤ 40 Ω

Testing conditions

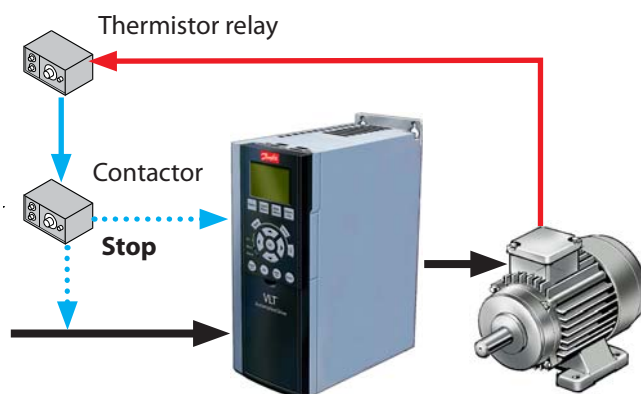
EN 60 947-8	
Rated impulse voltage	6000 V
Over voltage category	III
Contamination level	2
EMC – Immunity industry standard	EN61000-6-2
EMC – Emission industry standard	EN61000-6-4

Safety-related parameters

EN 61508, ISO 13849 for T _a = 75° C ongoing	
Category	2
SIL	2 for maintenance cycle of 2 years 1 for maintenance cycle of 3 years
HFT	0
PFD (test interval one year)	4.10 x 10 ⁻³
SFF	90%
Is + IDD	8515 FIT
IDU	932 FIT

Ordering Number: 130B1137

Traditional PTC solution



Integrated in the VLT® drive

