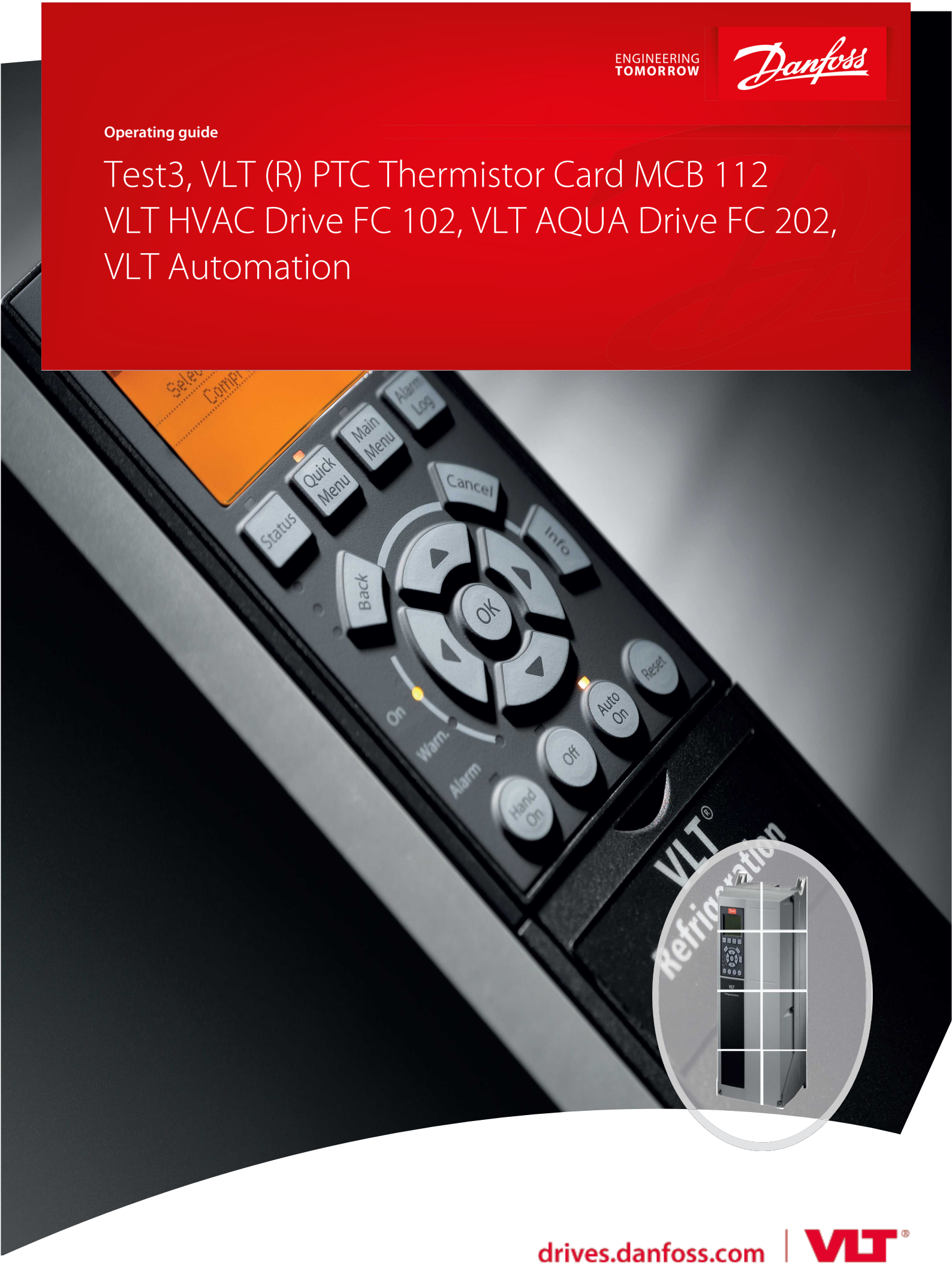
ENGINEERING
TOMORROW

Operating guide

Test3, VLT (R) PTC Thermistor Card MCB 112 VLT HVAC Drive FC 102, VLT AQUA Drive FC 202, VLT Automation



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1 Test3, Introduction

1.1 Test3, Purpose of the Manual

This manual provides information for safe installation and commissioning of VLT ® PTC Thermistor Card MCB 112 VLT® frequency converter with Safe Torque Off (STO). The manual is intended for use by qualified personnel only.

VLT PTC Thermistor Card is also referred to as MS 220 DA.

The operating instructions are intended for use by qualified personnel. Read and follow the operating instructions to use the frequency converter safely and professionally, and pay particular attention to the safety instructions and general warnings. Keep these operating instructions available with the frequency converter at all times.

VLT is a registered trademark.

1.2 Test3, Functional Overview

1.2.1 Test3, Intended Use

The VLT® PTC Thermistor Card MCB 112 is intended to:

- Protect electrical motors against inadmissible heating due to overload.
- Protect explosion-protected motors in explosive atmospheres caused by gases, vapours, or mists, Zone 1 and Zone 2, and/or in explosive atmospheres caused by dust, Zone 21 and Zone 2. Refer to marking G for Zone 1 and Zone 2. Refer to marking D for Zone 21 and Zone 22.

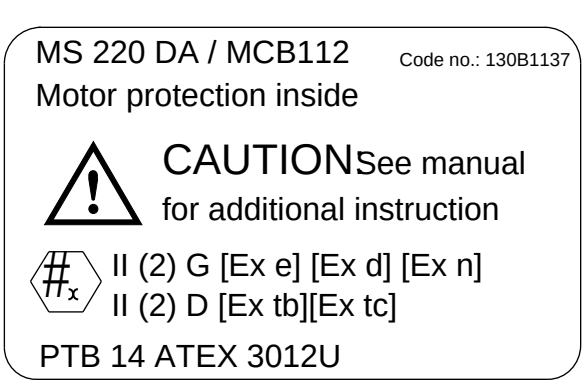
All functions in the MCB 112 serve to protect both non-explosive-protected motors and explosive-protected motors in regular operation and in case of failure.

The VLT® PTC(VDE 0660 part 0302). Only connect PTC thermistor sensors according to DIN 44081 AND 44082 (EN 60947-8).

⚠ NOTICE ⚠

1.2.1.1 Test3, Markings of the Frequency Converter

A sticker is delivered with the option as spare part or with the frequency converter to signify ATEX certification. Apply this sticker to the front of the frequency converter in which the ATEX module is integrated. The sticker indicates that the ATEX module is installed in the frequency converter.



Label to Apply to Frequency Converter

1.2.2 Test3, Tripping Function

The VLT® PTC Thermistor Card MCB 112 includes a tripping stage for PTC thermistor sensors with safe potential separation of supply voltage from ground. The tripping function switches off the +24 V DC directly at terminal 37 on the frequency converter.

The PNP logic output terminal X44/10 signals the status in case of failure. The MCB 112 works according to the closed-circuit principle. The device trips in case of short circuit or line interruption.

2 Test3, Safety

3 Test3, Installation

3.1 Test3, Installing the Sensor Circuit Wires

Context:

Install the sensor circuit wires for the as follows:

Prerequisites:

⚠ NOTICE ⚠

- The connections are not prewired from the factory

⚠ WARNING ⚠

NO SAFE STOP FUNCTION

Using sensor wires with a resistance >20 Ω causes the safe function not to work.

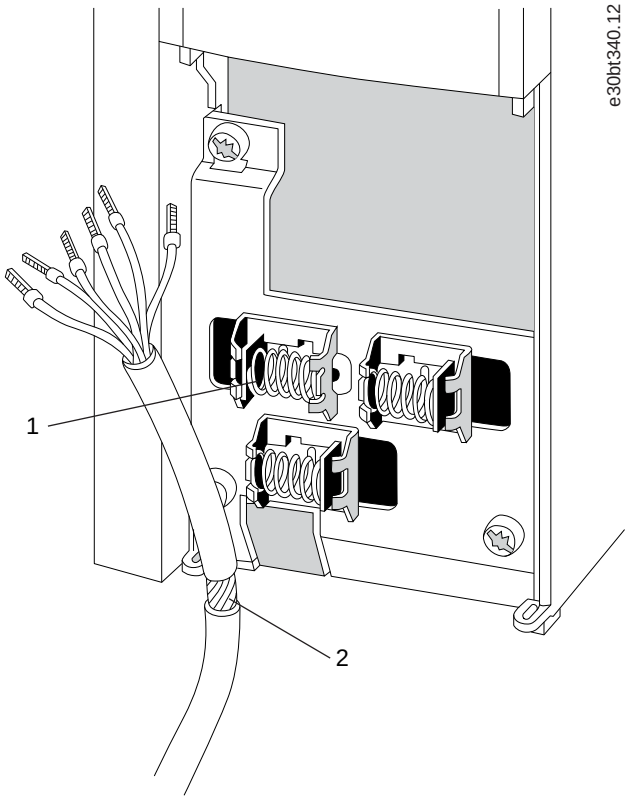
- To ensure a properly working safe funtion, only use sensor circuit wires with a resistance of <20 Ω.

Table 1: Maximum Permissible Lenght of the Sensor Circuit Wires

Wire cross-section [mm^2]	Wire length [m]
1.5	2 x 800
1	2 x 500
0.75	2 x 300
0.5	2 x 250

Procedure

1. Select the appropriate sensor wires.
2. Route the sensor wires.
3. Remove the shielding in the area of the shielding clamps and press the wires into the clamps.



1 Shield clamps	**2** Removed shield

Illustration 2: Connecting the Wire Shield

4. Measure the sensor resistance.
5. Connect the sensor circuit wires to X44/T1 and T2.

4 Test3, Technical Specification

4.1 Test3, Mains Supply

type	value
Rated supply voltage U_S	24 V DC
Tolerance voltage U_S	21–28 V DC
Power consumption	<1 W

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Glossary_TrainingTest3, Symbols, Abbreviations, and Conventions

A

Ambient temperature — The temperature in the immediate vicinity of the system or component.

Ambient temperature copied to see what happens if we have a very long glossterm — The temperature in the immediate vicinity of the system or component.

Analog input — Bla bla bla bla

Abe (test) — Where is this displayed?

E

ETR — Electronic thermal relay

L

LCP — Local Control Panel

M

Motor shaft — Rotating shaft on the A side of the motor, typically without a key groove.

N

NC

P

PNP — Positive negative positive (transistor)

T

TNF — Nominal response temperature

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