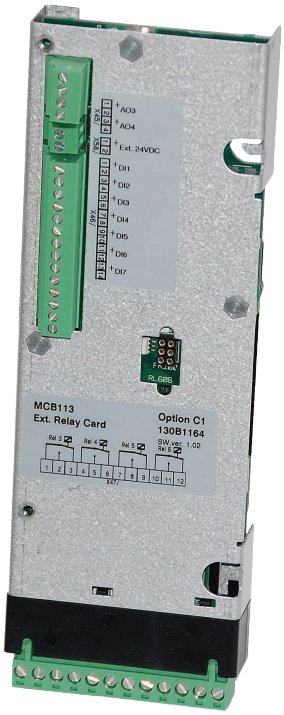
VLT® Extended Relay Card MCB 113



The new Extended Relay Card MCB 113 adds inputs/outputs to VLT® AutomationDrive for increased flexibility.

- 7 Digital Inputs
- 2 Analog Outputs
- 4 SPDT Relays (240 V AC/ 24 V DC)

The Extended Relay Card can be used with all Danfoss VLT® AutomationDrive products in the power range 0.25 kW – 1.2 MW.

Easy Installation
- Fits as a standard C1-option for the VLT® AutomationDrive
- Automatic detection by the VLT® AutomationDrive
- Swift and cost-efficient upgrade on-site using "Plug & Play" like all other VLT® AutomationDrive options
- Can be used as decentral I/O expansion
- Makes it possible to comply with the German NAMUR recommendations NE 37 Realisation of Frequency Converters Standard Terminal Strip for Variable-speed Drives

Compliance with NE 37
- Easy installation
- Integrated control
- Pluggable – field installable

Galvanic Isolation
- Possibilty for connection of external 24V to ensure galvanic isolation between the VLT® AutomationDrive and the option card
- Can also be supplied through internal 24V from the VLT® AutomationDrive if no galvanic isolation is necessary

Alarm handling
- Based on intelligent evaluation, the FC 302 gives the correct diagnosis and thus facilitates trouble shooting
- Status detection
- Utilises the graphical display of the VLT® AutomationDrive
- Logging of the alarm state

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

Features	Benefits
Relays control via bus	No need for external relay control
Isolated solution (PELV)	Reduced installation and maintenance cost
Plug-and-play	Swift commissioning
NAMUR NE 37 compliance	Easy setup, compatibility

VLT®
THE REAL DRIVE

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: 130B1164 uncoated and 130B1264 coated

Example of customised chemical module solution

Danfoss offers customised solutions in close cooperation with partner companies. The example shown is a chemical module that boasts all the protective devices required for use on an EEx d motor. This includes the PTC relay, an LC filter reducing the voltage load on the motor, thus complying with NAMUR Recommendation 38.

An optimal relay and terminal stop complying with NAMUR recommendation 37 is also applied.