MCB 101 - General Purpose I/O Option Module Operating Instructions

TR200

BAS-SVX28A-E4

January 2009

BAS-SVX28A-E4

Warnings, Cautions and Notices

Note that warnings, cautions and notices appear at appropriate intervals throughout this manual. Warnings are provide to alert installing contractors to potential hazards that could result in personal injury or death. Cautions are designed to alert personnel to hazardous situations that could result in personal injury, while notices indicate a situation that could result in equipment or property-damage-only accidents.
Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

Warnings, Cautions and Notices appear at appropriate sections throughout this literature. Read these carefully.

⚠WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE

Indicates a situation that could result in equipment or property-damage only accidents.

Note
Indicates something important to be noted by the reader.

★	Indicates default setting

Introduction

This instruction describes the General Purpose I/O option MCB 101 for use in the TR200 expanding the number of input/output in the frequency converter.

The MCB 101 option includes 3 digital inputs, 2 analog inputs, 2 digital outputs and 1 analog output.

SW firmware version to be installed in the drive control card must be version 3.00 or later versions for series, and version 1.1x for TR200 series. Check par.15-43 Software Version for firmware version.

Code Numbers To Be Used At Ordering The Complete Kit For Upgrades

Standard version code no. 130B1125.
Coated version code no. 103B1212.

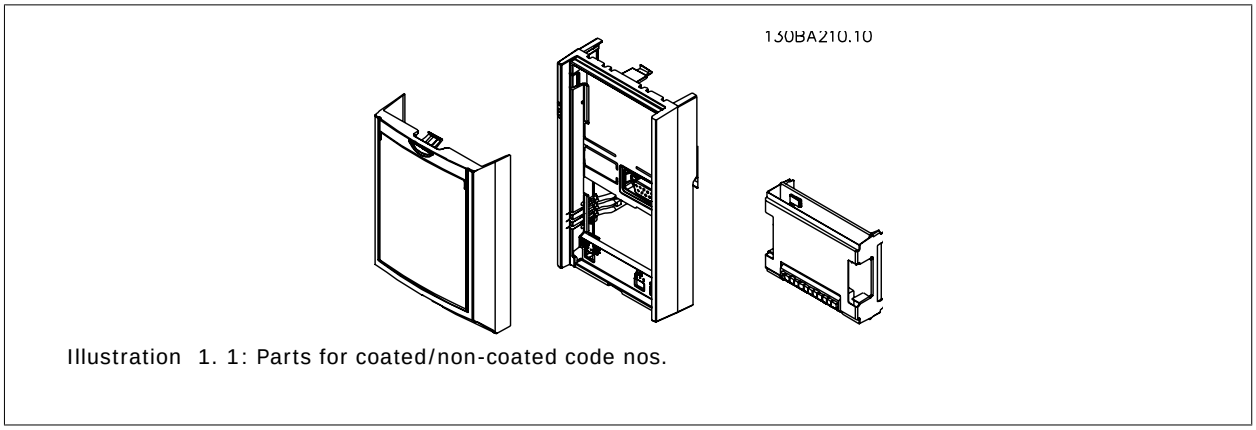


Illustration 1. 1: Parts for coated/non-coated code nos.

Galvanic Isolation in the MCB 101

Digital/analog inputs are galvanically isolated from other inputs/outputs on the MCB 101 and in the control card of the frequency converter. Digital/analog outputs in the MCB 101 are galvanically isolated from other inputs/ outputs on the MCB 101, but not from these on the control card of the drive.

If the digital inputs 7, 8 or 9 are to be switched by use of the internal 24 V power supply (terminal 9) the connection between terminal 1 and 5 which is illustrated in the drawing has to be established.

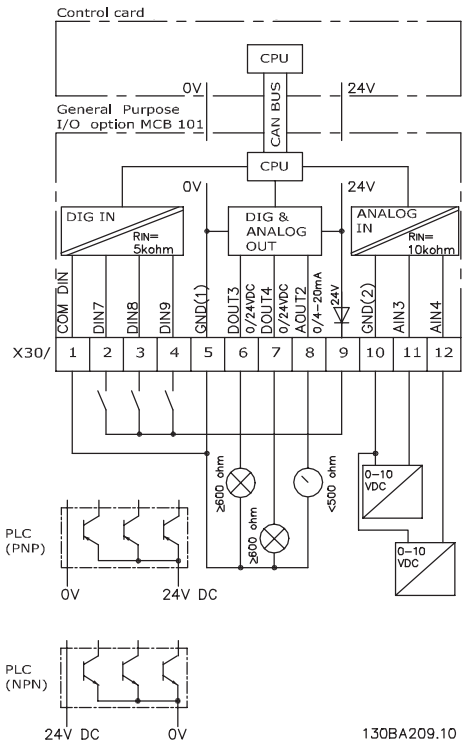


Illustration 1. 2: Principle Diagram

Digital Inputs - Terminal X30/1-4

Parameters for set-up: 5-16, 5-17 and 5-18

Number of digital inputs	Voltage level	Voltage levels	Tolerance	Max. Input impedance
3	0-24 V DC	PNP type: Common = 0 V Logic "0": Input < 5 V DC Logic "0": Input > 10 V DC NPN type: Common = 24 V Logic "0": Input > 19 V DC Logic "0": Input < 14 V DC	± 28 V continuous ± 37 V in minimum 10 sec.	Approx. 5 k ohm

Analog Voltage Inputs - Terminal X30/10-12

Parameters for set-up: 6-3*, 6-4* and 16-76

Number of analog voltage inputs	Standardized input signal	Tolerance	Resolution	Max. Input impedance
2	0-10 V DC	± 20 V continuously	10 bits	Approx. 5 K ohm

Digital Outputs - Terminal X30/5-7

Parameters for set-up: 5-32 and 5-33

Number of digital outputs	Output level	Tolerance	Max.impedance
2	0 or 24 V DC	± 4 V	≥ 600 ohm

Analog Outputs - Terminal X30/5+8

Parameters for set-up: 6-6* and 16-77

Number of analog outputs	Output signal level	Tolerance	Max.impedance
1	0/4 - 20 mA	± 0.1 mA	< 500 ohm

Mounting of Option Modules in Slot B

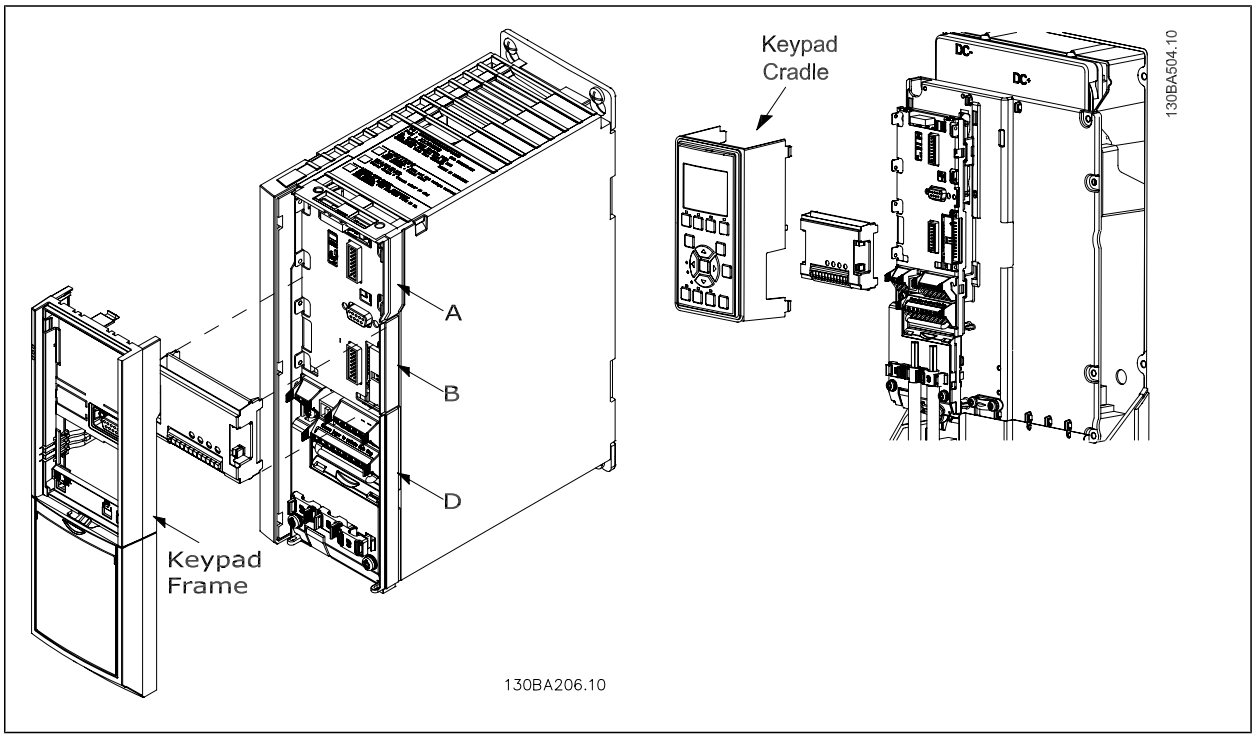
The power to the frequency converter must be disconnected.

For A2, A3 and B3 enclosures:

- Remove the keypad, the terminal cover, and the keypad frame from the frequency converter.
- Fit the MCB 101 option card into slot B.
- Connect the control cables and relieve the cable by the enclosed cable strips.
  Remove the knock out in the extended keypad frame delivered in the option set, so that the option will fit under the extended keypad frame.
- Fit the extended keypad frame and terminal cover.
- Fit the keypad or blind cover in the extended keypad frame.
- Connect power to the frequency converter.
- Set up the input/output functions in the corresponding parameters, as mentioned in this document.

For A5, B1, B2, B4, C1, C2, C3, C4, D, E and F enclosures:

- Remove the keypad and the keypad cradle
- Fit the MCB 101 option card into slot B
- Connect the control cables and relieve the cable by the enclosed cable strips
- Fit the cradle
- Fit the keypad



A2, A3 and B3 enclosures	A5, B1, B2, B4, C1, C2, C3, C4, D, E and F enclosures

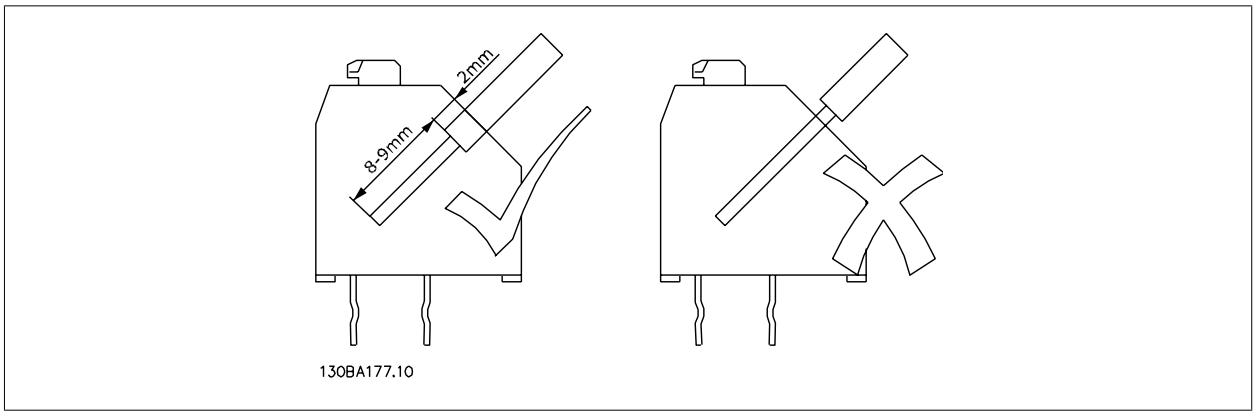
Mounting Guidelines - Step By Step

These step-by-step instructions describe how to mount the control cables:

- The power to the frequency converter must be disconnected.
- Remove the keypad, the terminal cover, and the keypad frame from the frequency converter.
- Fit the MCB 101 option card into slot B.
- Connect the control cables and relieve the cable by the enclosed cable strips.
- Remove the knock out in the extended keypad frame, so that the option will fit under the extended keypad frame.
- Fit the extended keypad frame and terminal cover.
- Fit the keypad or blind cover in the extended keypad frame.
- Connect power to the frequency converter.
- Set up the input/output functions in the corresponding parameters, as mentioned in the *Programming Guide*.

How To Mount Cables

The graphic below illustrates how to mount the cables.



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For more information, contact your local Trane office or e-mail us at comfort@trane.com

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