

Cat No.: IDVXX-E3-1

## **DV Series**

Advanced Function General-purpose Inverter

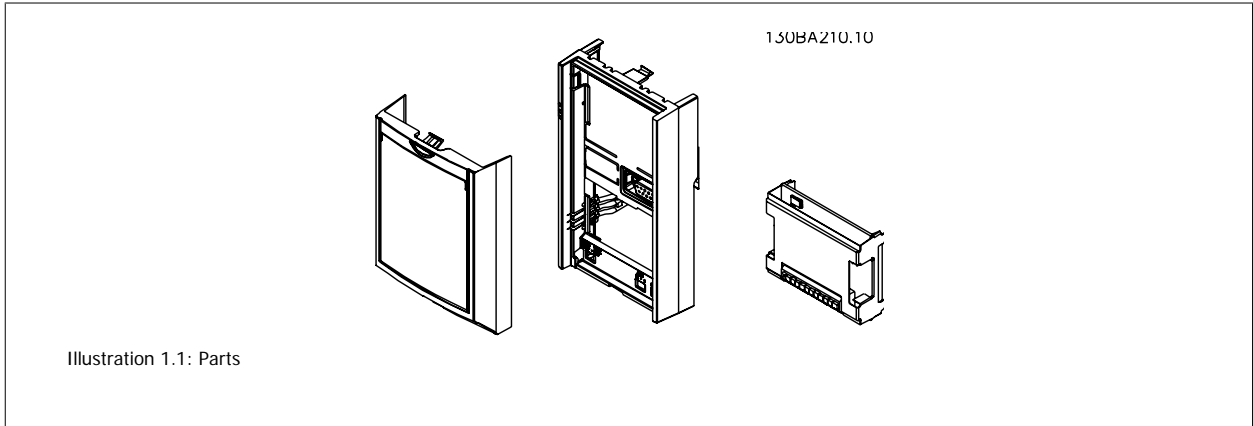
# **General Purpose I/O Option Module Instruction**

### 1.1.1 Introduction

This instruction describes the General Purpose I/O option for use in the "aDVanced AC Drive" series, expanding the number of input/output in the drive.

The MCB101 option includes 3 digital inputs, 2 analog inputs, 2 digital outputs and 1 analog output.

### 1.1.2 Kit For Upgrades



### 1.2.1 Galvanic Isolation in the MCB 101

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Digital/analog inputs are galvanically isolated from other inputs/outputs on the MCB 101 and in the control card of the drive. 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.

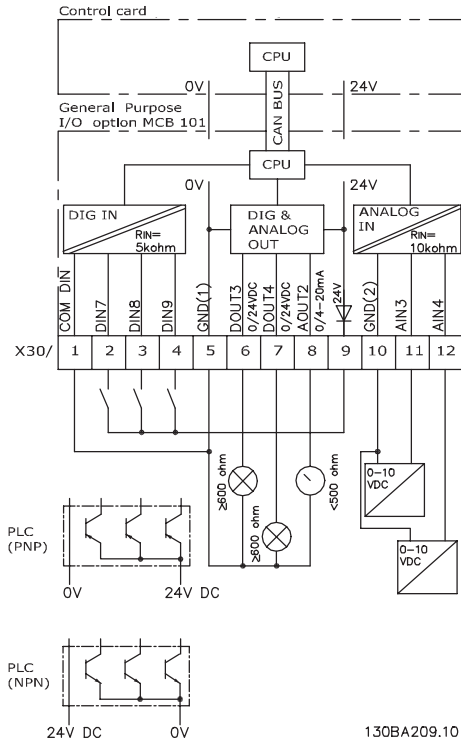


Illustration 1.2: Principle Diagram

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### 1.2.2 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	$\pm 28$ V continuous $\pm 37$ V in minimum 10 sec.	Approx. 5 k ohm

### 1.2.3 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	$\pm 20$ V continuously	10 bits	Approx. 5 K ohm

### 1.2.4 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	$\pm 4$ V	$\geq 600$ ohm

### 1.2.5 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	$\pm 0.1$ mA	< 500 ohm

### 1.3.1 Mounting of Option Modules in Slot B

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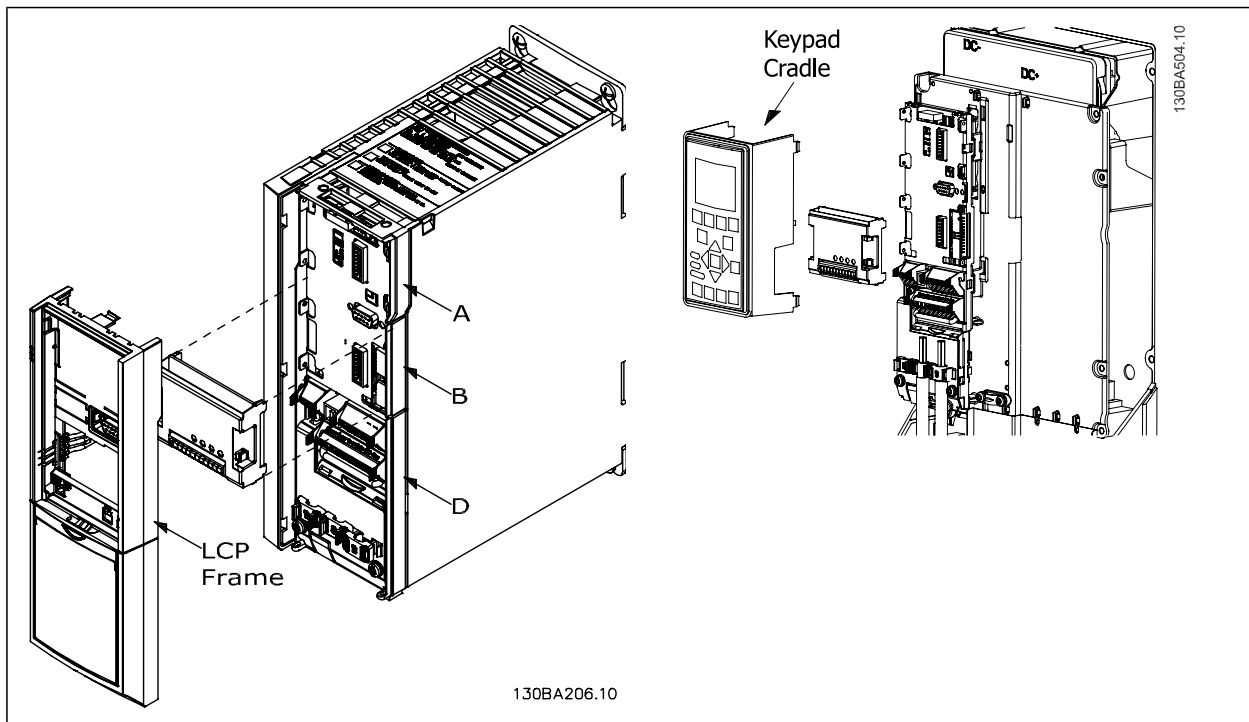
The power to the drive must be disconnected.

For A2, A3 and B3 enclosures:

- Remove the Digital Operator (Local Control Panel), the terminal cover, and the Digital Operator frame from the drive.
- Fit the MCB10x 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 Digital Operator frame delivered in the option set, so that the option will fit under the extended Digital Operator frame.
- Fit the extended Digital Operator frame and terminal cover.
- Fit the Digital Operator or blind cover in the extended Digital Operator frame.
- Connect power to the drive.
- 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 Digital Operator and the Digital Operator cradle
- Fit the MCB10x option card into slot B
- Connect the control cables and relieve the cable by the enclosed cable strips
- Fit the cradle
- Fit the Digital Operator



A2, A3 and B3 enclosures

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

### 1.3.2 Mounting Guidelines - Step By Step

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

- The power to the drive must be disconnected.
- Remove the Digital Operator (Local Control Panel), the terminal cover, and the Digital Operator frame from the drive.
- Fit the MCB101 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 Digital Operator frame, so that the option will fit under the extended Digital Operator frame.
- Fit the extended Digital Operator frame and terminal cover.
- Fit the Digital Operator or blind cover in the extended Digital Operator frame.
- Connect power to the drive.
- Set up the input/output functions in the corresponding parameters, as mentioned in the *Programming Guide*.

### 1.3.3 How To Mount Cables

The graphic below illustrates how to mount the cables.

