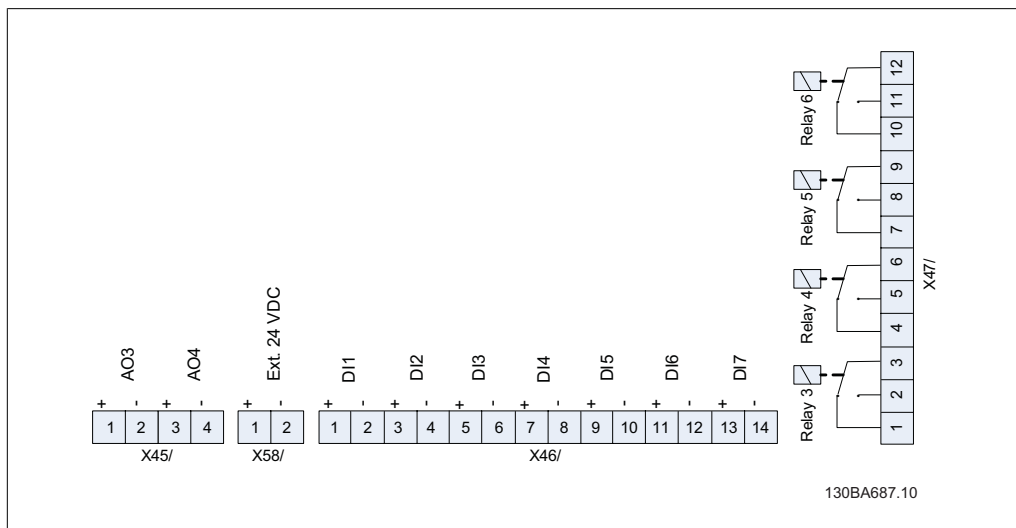


1.1. New Parameters

The parameters included in this Instruction, FC 300 Extended Relay Card MCB 113 Instruction MI.33.G1.02 are additional parameters for the FC 300 Programming Guide MG.33.MX.YY

The layout of the I/O of the MCB 113 Extended Relay Card is illustrated in the following.



1.2. Analog Outputs

1.2.1. 6-7* Analog Output 3

Parameters for configuring the scaling and limits for analog output 3, Terminal X45/1 and X45/2. Analog outputs are current outputs: 0/4 – 20 mA. Resolution on analog output is 12 bit.

6-70 Terminal X45/1 Output

Option:

Function:

Select the function of Terminal X45/1 as an analog current output.

[0] * No operation

6-71 Terminal X45/1 Output Min Scale

Option:

Function:

[0%] *

Scale the minimum output of the selected analog signal at terminal X45/1, as a percentage of the maximum signal value. E.g. if 0 mA (or 0 Hz) is desired at 25% of the maximum output value, then programme 25%. Scaling values up to 100% can never be higher than the corresponding setting in par. 6-72.

6-72 Terminal X45/1 Output Max Scale

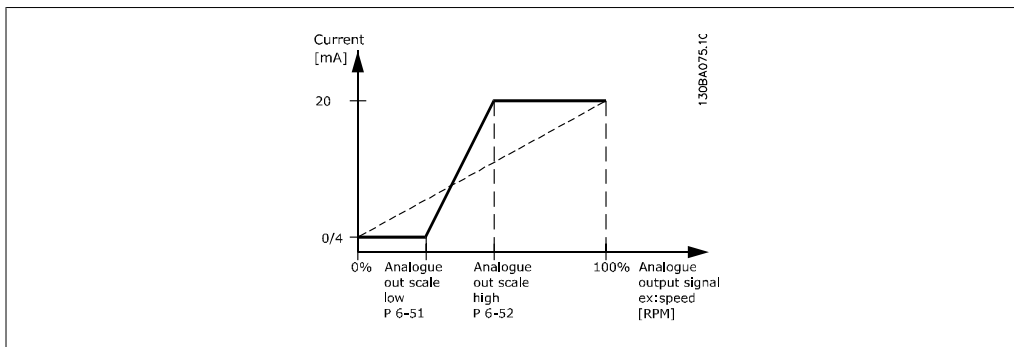
Option:

[0%] *

Function:

Scale the maximum output of the selected analog signal at terminal X45/1. Set the value to the maximum value of the current signal output. Scale the output to give a current lower than 20 mA at full scale; or 20 mA at an output below 100% of the maximum signal value. If 20 mA is the desired output current at a value between 0 - 100% of the full-scale output, programme the percentage value in the parameter, i.e. 50% = 20 mA. If a current between 4 and 20 mA is desired at maximum output (100%), calculate the percentage value as follows:

$$20 \text{ mA} / \text{desired maximum current} \times 100\% \quad \text{i.e. } 10 \text{ mA} : \frac{20}{10} \times 100 = 200\%$$



6-73 Terminal X45/1 Output Bus Control

Option:

[0%] *

Function:

Holds the level of Analog Output 3 (terminal X45/1) if controlled by bus.

6-74 Terminal X45/1 Output Timeout Preset

Option:

[0%] *

Function:

Holds the preset level of Analog Output 3 (terminal X45/1). In case of a bus timeout and a timeout function is selected in par. 6-70 the output will preset to this level.

1.2.2. 6-8* Analog Output 4

Analog outputs are current outputs: 0/4 - 20 mA. Terminal X45/3 and X45/4. Analog outputs are current outputs: 0/4 - 20 mA. Resolution on analog output is 12 bit.

6-80 Terminal X45/3 Output

Option:

[0] * No operation

Function:

6-81 Terminal X45/3 Output Min Scale

Option:

[0%] *

Function:

Scales the minimum output of the selected analog signal on terminal X45/3. Scale the minimum value as a percentage of the maximum signal value, i.e. 0 mA (or 0 Hz) is desired at 25% of the maximum output value and 25% is programmed. The value can never be higher than the corresponding setting in par. 6-82 if value is below 100%.

This parameter is active when option module MCB 113 is mounted in the frequency converter.

6-82 Terminal X45/3 Output Max Scale

Option:

[0%] *

Function:

Scales the maximum output of the selected analog signal on terminal X45/3. Scale the value to the desired maximum value of the current signal output. Scale the output to give a lower current than 20 mA at full scale or 20 mA at an output below 100% of the maximum signal value. If 20 mA is the desired output current at a value between 0 - 100% of the full-scale output, program the percentage value in the parameter, i.e. 50% = 20 mA. If a current between 4 and 20 mA is desired at maximum output (100%), calculate the percentage value as follows:

$$20 \text{ mA} / \text{desired maximum current} \times 100\% \quad \text{i.e. } 10 \text{ mA} : \frac{20}{10} \times 100 = 200\%$$

6-83 Terminal X45/3 Output Bus Control

Option:

[0%] *

Function:

6-84 Terminal X45/3 Output Timeout Preset

Option:

[0%] *

Function:

1.3. 16-6* Input and Output

1.3.1. 16-6* Analog Inputs and Outputs

Parameters for reporting the digital and analog IO ports.

16-78 Analog Out X45/1 [mA]

Option:

[0%] *

Function:

View the actual value at output 42 in mA. The value shown reflects the selection in par. 6-50.

16-79 Analog Out X45/3 [mA]

Option:**Function:**

View the actual value at output 42 in mA. The value shown reflects the selection in par. 6-50.

1.4. 24 V DC External Supply

1.4.1. 14-6* Options

14-60 MCB 113 Supplied by External 24 V DC

Option:**Function:**

[0] * No

[1] * Yes

1.5. Digital Inputs

5-20 Terminal X46/1 Digital Input (MCB 113)

Option:**Function:**

[0] * No operation

This parameter is active when option module MCB 113 is installed in the frequency converter.
Follow the function stated in 5-1*

5-21 Terminal X46/3 Digital Input

Option:**Function:**

[0] * No operation

This parameter is active when option module MCB 113 is installed in the frequency converter.
Follow the function stated in 5-1*

5-22 Terminal X46/5 Digital Input

Option:**Function:**

[0] * No operation

This parameter is active when option module MCB 113 is installed in the frequency converter.
Follow the function stated in 5-1*

5-23 Terminal X46/7 Digital Input

Option:**Function:**

[0] * No operation

This parameter is active when option module MCB 113 is installed in the frequency converter.
Follow the function stated in 5-1*

5-24 Terminal X46/9 Digital Input

Option:**Function:**

[0] * No operation

This parameter is active when option module MCB 113 is installed in the frequency converter.

Follow the function stated in 5-1*

5-25 Terminal X46/11 Digital Input

Option:	Function:
[0] * No operation	This parameter is active when option module MCB 113 is installed in the frequency converter. Follow the function stated in 5-1*

5-26 Terminal X46/13 Digital Input

Option:	Function:
[0] * No operation	This parameter is active when option module MCB 113 is installed in the frequency converter. Follow the function stated in 5-1*

1.6. Relays

5-40 Function Relay

Option:	Function:
	Relay 2 is included in FC 302 only. Par. 5-40 functions are as for par. 5-3*, including options 36 and 37. Par. 5-40 options are as for par. 5-30, including options 36 and 37. Relay 2 is included in FC 302 only. Relay 3, 4, 5 and 6 are included in MCB 113 Relay option module. Relay 7, 8 and 9 are included in MCB 105 Relay option module.

[0]	(Relay 1)
[1]	(Relay 2)
[2]	Relay 3
[3]	Relay 4
[4]	Relay 5
[5]	Relay 6
[6]	Relay 7
[7]	Relay 8
[8]	Relay 9
[36]	Control word bit 11
[37]	Control word bit 12

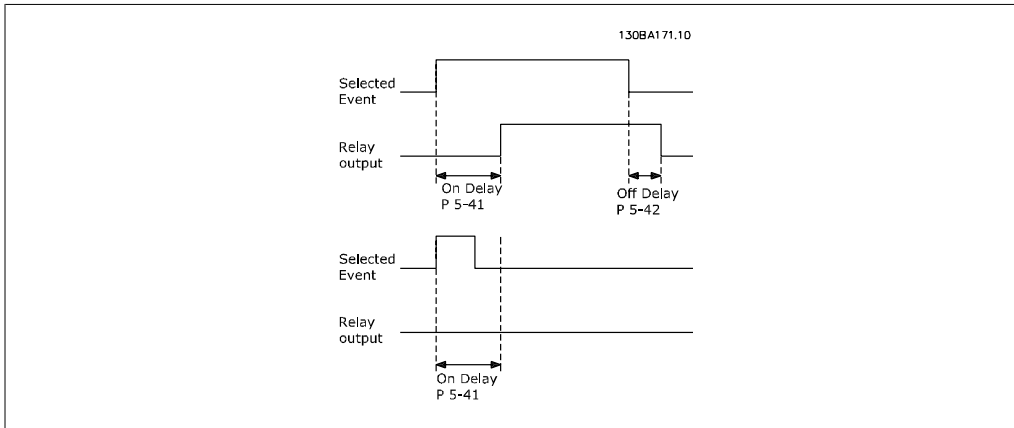
5-41 On Delay, Relay

Enter the delay of the relay cut-in time. See par. 5-40.

Array [8]	(Relay 1 [0], Relay 2 [1], Relay 7 [6], Relay 8 [7], Relay 9 [8])
-----------	---

0.01s* [0.01 - 600.00 s]

1



5-42 Off Delay, Relay

Enter the delay of the relay cut-out time. See par. 5-40.

Array [8] (Relay 1 [0], Relay 2 [1], Relay 7 [6], Relay 8 [7], Relay 9 [8])

0.01s* [0.01 - 600.00 s.]

If the Selected Event condition changes before the on- or off delay timer expires, the relay output is unaffected.

16-71 Relay Output

Range:

0* [0 - 15]

Function:

Bit 0	Relay 9
Bit 1	Relay 8
Bit 2	Relay 7
Bit 3	Relay 2
Bit 4	Relay 1
Bit 5	Relay 6
Bit 6	Relay 5
Bit 7	Relay 4
Bit 8	Relay 3
Bit 9-15	Reserved for future relays

