

reflex 'Add-on Module'

Deployment for 'variomat', 'reflexomat', 'gigamat' and 'servitec'
Software version 1.07 and later (isolating amplifier)
1.10 and later (parameterizable inputs and outputs)



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1. General

The procedures described below must be performed by a specialist according to the applicable local EVU and VDE provisions. Prior to performing any work on the control unit, it must be ensured that the unit is not alive. The non-compliance with the present instruction, in particular the notes on safety, may lead to the destruction and faults of the system, to personal injuries and may affect the function. In case of the violation of such instruction, any and all claims for warranty and liability are excluded.

2. Disconnecting the Control Unit from the Network

According to the type of the system, you disconnect the control unit from the network by disconnecting the mains plug or turning off the main switch.

3. Opening the Control Box

Caution: Even if the control box has been disconnected from the mains, external voltage may be present at the terminals 12, 14 as well as 23, 24, 25 (floating contacts)!

The same applies to terminals 51 to 72 of the add-on module as well as to components of the board.

4. Installation of the Board (Figure 1); not required if included in the delivery

Remove the nut with tooth lock washer from bolt no. 7 and screw on the fastening base included in the delivery. As shown in Figure 3, the corresponding cables of the digital 24V inputs (terminals 69-76) and the analog outputs (terminals 77 to 81) can be fixed using a cable tie. If these terminals are not needed, you do not have to perform this step.

Now, the 6 distance sleeves must be put on the threaded bolts 1 to 6. Then, the add-on module is attached on the bolts with the component side upwards. In the next step, the cable tie included in the delivery is attached to bolt no. 4 using the fixing eyelet. This can be used later to connect the cables for the terminals 51 to 72 (floating outputs and 230 V outputs). If these terminals are not needed, you do not have to use the cable tie.

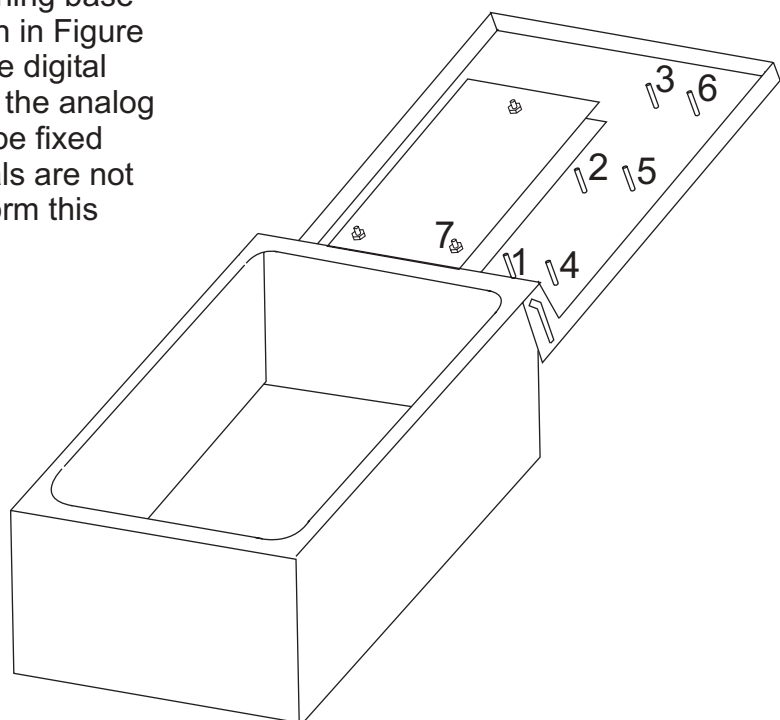


Figure 1: Designation of the distance bolts on the case cover

Now, the add-on module is screwed on using the included self-locking nuts.

Caution: With respect to bolt no. 6, you must place a tooth lock washer between the board and the nut to ensure a good PE connection!

Now, the ribbon cable of the add-on module is plugged in on the main board (X3 extension; nose of the plug showing towards the cover wall) and fastened with the included ribbon cable tie on the side wall of the control box (in the same manner as the ribbon cable between CPU and I/O card). The installation of the add-on module is complete.

5. Notes Regarding the Connection of the Add-on Module

The following inputs/outputs can be connected to the add-on module at most:

Signal	Supply	No.	Terminal no.
floating change-over contacts		6	51 to 68
digital inputs 230 V AC	external voltage	3	69 to 72
digital inputs 24 V DC	natural voltage	3	73 to 76
Analog outputs (pressure/level)		2	77 to 81

Max. line length for analog signals: 100 m

Installation of the Cables according to the EMV Guidelines:

The cable for the analog outputs must be **shielded in any case**. Terminal 81 is provided for the connection of the sheath. The cables of the analog outputs and the digital inputs (24 V DC) must be laid separately from the floating outputs and the digital inputs (230 V AC).

Figure 3 shows the correct installation of the cables in the maximum layout.

By default, the control unit is delivered with a flange plate with 11 cable bushings. For a maximum layout of the control box, this number is, however, not sufficient to accommodate all cables. Therefore, a flange plate providing 13 cable bushings is delivered for this case. **Figure 2** shows the configuration of this flange plate. The borings with a grey hatching are reserved for the add-on module.

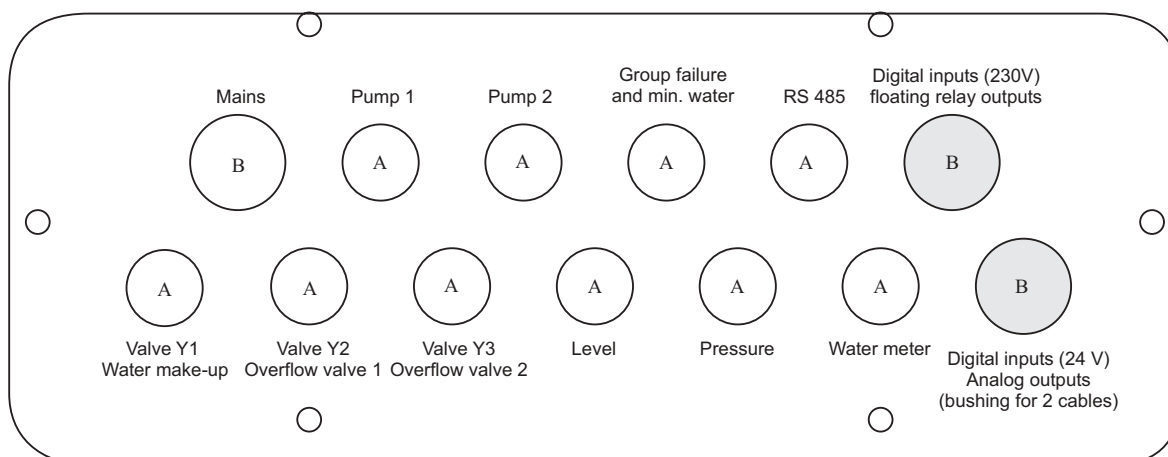
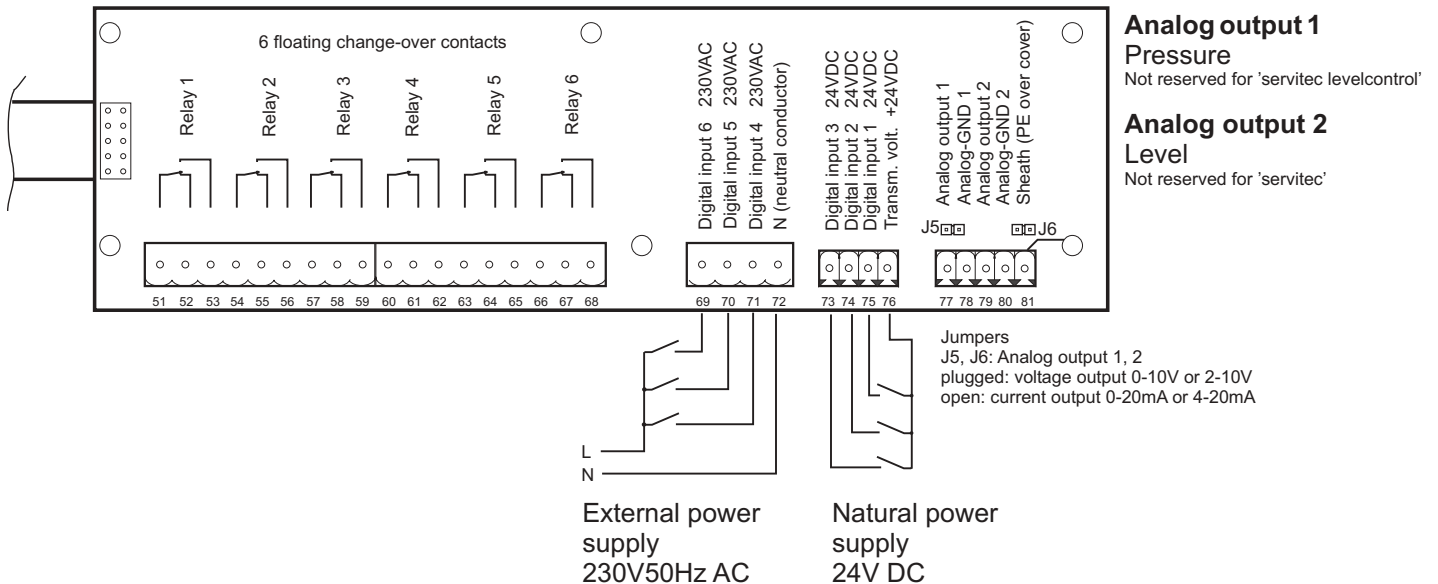


Figure 2



Figure 3

Terminal Configuration for the Add-On Module



Caution:

For standard systems with an analog signal of the pressure and level sensors of 4-20 mA, a signal of 2-10 V is forwarded as voltage output signal (jumper 5 or jumper 6 plugged).

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Default parameterization for software version 1.10 and later; modifications may only be made by the Reflex service!

variomat

Position	Signal evaluation as	Message text	Failure memory entry	Priority over sequence	Signal on input triggers the following action
Input 1	Break	ext. temp. monitoring	yes	yes	SV 2 (OV1) closed, SV2 (OV2) closed, switching of output relay 1 (floating contact)
Input 2	Break	ext. min. pressure	yes	no	SV 2 (OV1) closed, SV3 (OV2) closed, switching of output relay 2 (floating contact)
Input 3	Break	Manual water make-up	yes	yes	SV 1 (WM) open, switching of output relay 5 (floating contact)
Input 4	Make	Emergency stop	yes	yes	Pump 1 off, pump 2 off, SV 1 (WM) closed, SV2 (OV1) closed, V2 (OV2) closed, switching of group failure on main board (floating contact)
Input 5	Make	Manual pump 1	yes	yes	Pump 1 on, switching of output relay 5 (floating contact)
Input 6	Make	Manual OV 1	yes	yes	SV 2 (OV1) open, switching of output relay 5 (floating contact)
Output 1	Change-over	---	---	---	see Input 1
Output 2	Change-over	---	---	---	see Input 2
Output 3	Change-over	---	---	---	switches with: message ER 01; min. pressure fallen short of
Output 4	Change-over	---	---	---	switches with: message ER 10; max. pressure exceeded
Output 5	Change-over	---	---	---	switches with: "Manual operation", "stop operation", activating of inputs 3, 5, 6
Output 6	Change-over	Water make-up error	---	---	switches with: Messages: ER 06,07, 11, 15, 20

gigamat

Position	Signal evaluation as	Message text	Failure memory entry	Priority over sequence	Signal on input triggers the following action
Input 1	Break	ext. temp. monitoring	yes	yes	SV 2 (OV1) closed, SV3 (OV2) closed
Input 2	Break	Emergency stop	yes	no	Pump 1 off, pump 2 off, SV 1 (WM) closed, SV2 (OV1) closed, V2 (OV2) closed, switching of group failure on main board (floating contact)
Input 3	Break	Manual water make-up	yes	yes	SV 1 (WM) open, switching of output relay 5 (floating contact)
Input 4	Break	min pressure controller	yes	yes	SV 2 (OV1) closed, SV3 (OV2) closed
Input 5	Make	Manual pump 1	yes	yes	Pump 1 on, switching of output relay 5 (floating contact)
Input 6	Make	Manual overflow device 1	yes	yes	SV 2 (OV1) open, switching of output relay 5 (floating contact)
Output 1	Change-over	---	---	---	switches with: pump 1 or pump 2 on, failure
Output 2	Change-over	---	---	---	switches with: SV 2 (OV1) open or SV 3 (OV2) open
Output 3	Change-over	---	---	---	switches with: SV 1 (WM) open
Output 4	Change-over	---	---	---	switches with: triggering of input 4 (min. pressure controller)
Output 5	Change-over	---	---	---	switches with: "Manual operation" or "stop operation" or if inputs 3, 5, 6 are active
Output 6	Change-over	Water make-up error	---	---	switches with: Messages: ER 06 (WM time), ER 07 (WM cycles), ER 11 (WM quantity), ER 15 (WM valve), or ER 20 (max. WM quantity)

reflexomat

Position	Signal evaluation as	Message text	Failure memory entry	Priority over sequence	Signal on input triggers the following action
Input 1	Break	ext. temp. monitoring	yes	yes	Switching of group failure on main board (floating contact)
Input 2	Break	ext. min. pressure	yes	yes	Switching of group failure on main board (floating contact)
Input 3	Break	Manual water make-up	yes	yes	SV 1 (WM) open
Input 4	Make	Emergency stop	yes	yes	Compr. 1 off, compr. 2 off, SV 1 (WM) closed, SV2 (OV1) closed, SV3 (OV2) closed, switching of group failure on main board (floating contact)
Input 5	Make	---	---	---	
Input 6	Make	---	---	---	
Output 1	Change-over	---	---	---	switches with ER 04.1 (failure compr. 1) or ER 04.2 (failure compr. 2)
Output 2	Change-over	---	---	---	switches with: messages: ER 06 (WM time), 07 (WM cycles), 11 (WM quantity), 15 (WM valve), 20 (max. WM quantity)
Output 3	Change-over	---	---	---	switches with: message ER 01 (min. pressure), ER 10 (max. pressure)
Output 4	Change-over	---	---	---	switches with: ER 03 (max. water level)
Output 5	Change-over	---	---	---	switches with: "Manual operation", "stop operation"
Output 6	Change-over	maximum level drain off	---	---	Active if level of 85% is exceeded; back with level of 70%

servitec

Position	Signal evaluation as	Message text	Failure memory entry	Priority over sequence	Signal on input triggers the following action
Input 1	Break	ext. temp. monitoring	yes	yes	Pump 1 off, pump 2 off, SV 2 (OV1) closed, SV3 (OV2) closed, switching of output relay 1 (floating contact)
Input 2	Break	ext. min. pressure	yes	yes	Switching of output relay 2 (floating contact)
Input 3	Break	Manual water make-up	yes	yes	Start make-up cycle if the starting level is fallen short of
Input 4	Make	Emergency stop	yes	yes	Pump 1 off, pump 2 off, SV 1 (WM) closed, SV2 (OV1) closed, SV3 (OV2) closed, switching of group failure on main board (floating contact)
Input 5	Make	Manual pump 1	yes	yes	Pump 1 on, switching of output relay 5 (floating contact)
Input 6	Make	Manual U1	yes	yes	SV 2 (OV) open, switching of output relay 5 (floating contact)
Output 1	Change-over	---	---	---	
Output 2	Change-over	---	---	---	
Output 3	Change-over	---	---	---	switches with: message ER 01 (min. pressure)
Output 4	Change-over	---	---	---	switches with: ER 10 (max. pressure)
Output 5	Change-over	---	---	---	switches with: "Manual operation", "stop operation"
Output 6	Change-over	Water make-up error	---	---	switches with: messages: ER 06 (WM time), 07 (WM cycles), 11 (WM quantity), 12 (filling time), 12 (filling quantity), 15 (WM valve), 20 (max. WM quantity)