

8.6 DO690

8.6.1 General Information

The DO690 is a standard digital output module. Outputs are triac outputs.

8.6.2 Order Data

Model Number	Short Description	Image
3DO690.6	2005 digital output module, 8 triac outputs 120 VAC, 1 A, 2 electrically isolated output groups. Order TB170 terminal block separately.	
3TB170.9	2005 terminal block, 20-pin, screw clamps	
3TB170.91	2005 terminal block, 20-pin, cage clamps	
3TB170:90-02	2005 terminal block, 20-pin, 20 pcs., screw clamps	
3TB170:91-02	2005 terminal block, 20-pin, 20 pcs., cage clamps	
Terminal blocks not included in the delivery (see "Accessories").		

Table 158: DO690 order data

8.6.3 Technical Data

Product ID	DO690	
C-UL-US Listed	Yes	
B&R ID Code	\$61	
Number of Outputs Total in 2 Groups of	8 4	
Design	Triac	
Electrical Isolation Output - PLC Group - Group Output - Output	Yes (optotriac) Yes (optotriac) No	
Switching Voltage Minimum Nominal Maximum	30 VAC 120 VAC 144 VAC	
Switching Voltage Frequency	45 to 63 Hz	
Continuous Current per Output Group Module	Max. 1 A Max. 2 A (simultaneousness factor = 50%) ¹⁾ Max. 4 A	
Leakage Current	4 mA (resistive load)	
Minimum Holding Current At 0° C At 60° C	3 mA 3 mA	
Switching Delay Switching Voltage Frequency Log. 0 - Log. 1 Log. 1 - Log. 0	At 50 Hz 10 ms 10 ms	At 60 Hz 8.5 ms 8.5 ms
Switching Frequency (resistive load)	Max. 100 Hz	
Overload Protection Internal External	Yes By user	
Protective Circuit Internal External	Yes Generally required (fuse)	
Power Consumption Internal 5 V 24 V Total External	Max. 1.5 W --- Max. 1.5 W Max. 6 W (simultaneousness factor = 50%) ¹⁾	
Dimensions	B&R 2005 single-width	

Table 159: DO690 technical data

1) Simultaneous factor = 50%: A maximum 4 of 8 outputs are allowed to be fully loaded at the same time.

8.6.4 Status LEDs

Image	LED	Description
	1 - 8	The status LEDs indicate the logical status of the corresponding outputs.

Table 160: DO690 status LEDs

8.6.5 Pin Assignments

TB170

Connection	Assignment	
1	COM for Output 1 -4	Group 1
2	---	
3	Output 1	
4	---	
5	Output 2	
6	---	
7	Output 3	
8	---	
9	Output 4	
10	---	
11	---	Group 2
12	Output 5	
13	---	
14	Output 6	
15	---	
16	Output 7	
17	---	
18	Output 8	
19	---	
20	COM for Output 5 - 8	

Table 161: DO690 pin assignment

8.6.6 Output Circuit Diagram

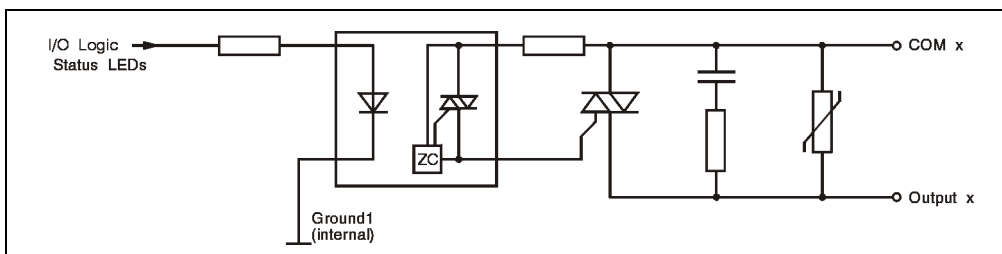


Figure 110: DO690 output circuit diagram

8.6.7 Variable Declarations

The variable declaration is made in B&R Automation Studio™:

Function	Variable Declarations				
	Scope	Data Type	Length	Module Type	Chan.
Single digital output (channel x)	tc_global	BOOL	1	Digit. Out	1 ... 8

Table 162: DO690 variable declaration