

11.2 AO350

11.2.1 General Information

The AO350 is a standard analog output module.

11.2.2 Order Data

Model Number	Short Description	Image
3AO350.6	2005 analog output module, 8 outputs, +/- 10 V, 12-bit. 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 210: AO350 order data

11.2.3 Technical Data

Product ID	AO350
C-UL-US Listed	Yes
B&R ID Code	\$A0
Number of Outputs	8 voltage outputs
Electrical Isolation	
Output - PLC	Yes
Output - Output	No
Output Signal	-10 to +10 V
Digital Converter Resolution	12-bit
Output Filter	Low pass 1st order / cut-off frequency: 1 kHz
Conversion Time for all Channels	250 µs

Table 211: AO350 technical data

Product ID	AO350
Load per Output	Max. ± 10 mA (load ≥ 1 k Ω)
Short Circuit Protection (current limit)	± 15 mA
Precision Basic Accuracy (at 20° C) Precision (0 to 60° C)	$\pm 0.25\%$ $\pm 0.5\%$
Power Consumption 5 V 24 V Total	Max. 1 W Max. 4 W Max. 5 W
Dimensions	B&R 2005 single-width

Table 211: AO350 technical data (cont.)

11.2.4 Status LEDs

Image	LED	Description
	RUN	The RUN LED indicates that the digital/analog converter is running.

Table 212: AO350 status LEDs

11.2.5 Pin Assignments

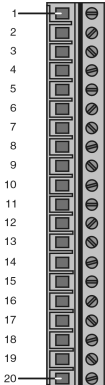
	Connection	Assignment
	1	+ Output 1
	2	- Output 1
	3	+ Output 2
	4	- Output 2
	5	+ Output 3
	6	- Output 3
	7	+ Output 4
	8	- Output 4
	9	Shield
	10	Shield
	11	Shield
	12	Shield
	13	+ Output 5
	14	- Output 5
	15	+ Output 6
	16	- Output 6
	17	+ Output 7
	18	- Output 7
	19	+ Output 8
	20	- Output 8

Table 213: AO350 pin assignment

Signal Cable Connection

Shielded cables must be used with analog output modules. The ground connection for the shield is made on one of the terminal block shield connections provided for the two outputs.

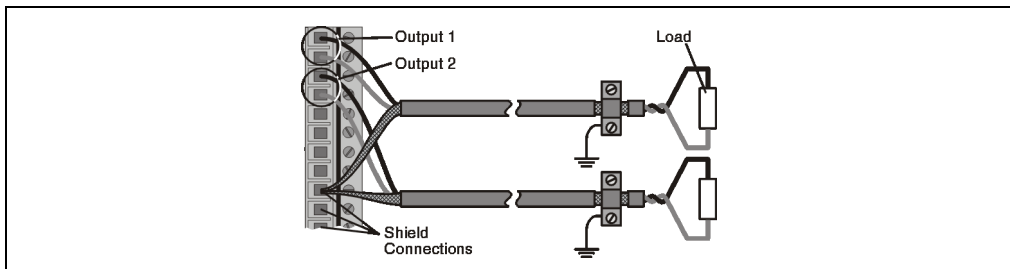


Figure 136: AO350 signal cable connection

The four shielded connections are of the equal value and each connected via RC elements with ground ($\perp$, i.e.: a spring contact and a mounting rail).

R: 22 k Ω , C: 10 nF / 60 V.

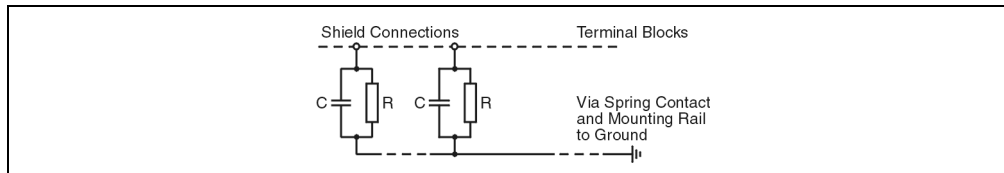


Figure 137: AO350 shielded connection

11.2.6 Output Circuit Diagram

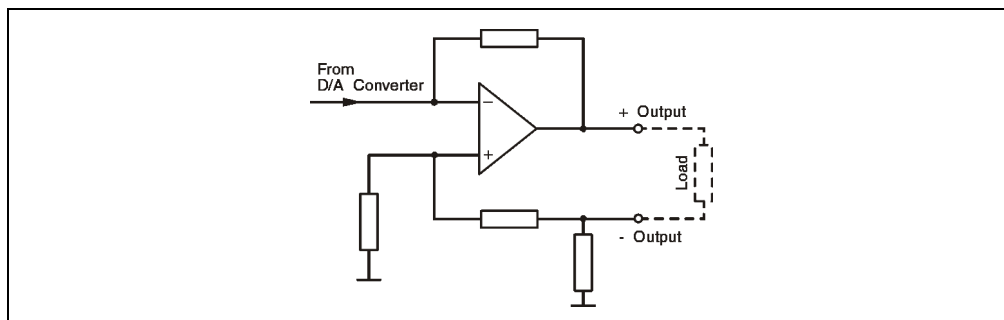


Figure 138: AO350 output circuit diagram

11.2.7 Relationship between Numerical Value and Output Voltage

Numerical Value		Output Voltage
Hexadecimal	Decimal	
8000	-32768	-10 V
C000	-16384	-5 V
FFF0	-16	-4.88 mV
0000	0	0 V
0010	16	4.88 mV
4000	16384	5 V
7FF0	32752	10 V

Table 214: AO350 relationship between numerical value and output voltage

11.2.8 Variable Declarations

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

Function	Variable Declarations				
	Scope	Data Type	Length	Module Type	Chan.
Single analog output (channel x)	tc_global	INT	1	Analog Out	1 ... 8

Table 215: AO350 variable declaration