

RTU7M – Digital Outputs

General Description

We offer digital output (DO) cards in two variants, with mechanical or electronic relays. Thanks to this, the user can decide on the optimal variant according to the required switching power, the number of required outputs, or whether or not isolating relays are used in the system.



Digital output card

The digital output card has its own processor, which, through the signal exciter, switches the relay according to the stated requirements. The card behaves as a slave unit in the RTU7M series, data is transferred on an internal bus of the RTU7M, which serves as the communication bridge. New versions of card (from Y2019) support new high-speed bus, which enables to use automation functions. There is also available backward reading of relay status. The card enables the remote upgrading of FW.

Basic Features

- ❑ HW and SW protection against accidental switching of output,
- ❑ adjustable time of closed contact,
- ❑ interference protection during switching of relay contact,
- ❑ special functions of some DO (thermostat control, protection relay).

Security of Digital Outputs

Great attention is focused on protection against accidental switching of the DO. It is resolved at two levels:

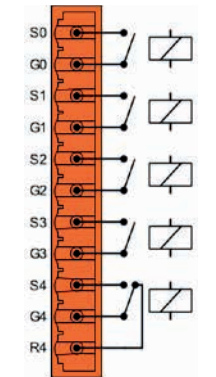
- ❑ SW level – a two-phase control of the relay switching is used. To be the command executed, the unit must receive two identical commands for switching of a relay in the stated time interval,
- ❑ HW level – each relay is controlled by two exciters. To perform the switching, both exciters must be activated at the same time. Each exciter is controlled by its own processor.

Special Functions

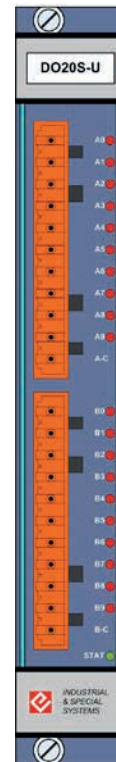
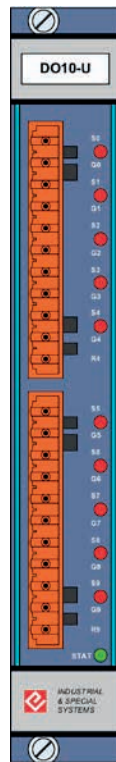
Depending on the type of FW, some DO may have a reserved function. An example is the switching of the heating in the switchboard cabinet depending on the temperature measured by the external sensor, function for controlling of the power switch during the evaluation of the earth fault, short circuit or overcurrent, etc.

Technical Specification of DO Cards

Card	DO10-U	DO20S-U
Outputs number	8 × relay (NO contact), 2 × relay (changeover contact)	20 optical relays
Time of closed contact	10 ms to 655 s with step 10 ms	10 ms to 655 s with step 10 ms, max. output change frequency 250 Hz
Isolation contact-coil	5 kV AC for 1 minute	
Isolation between open contacts	1 kV AC for 1 minute	–
Contacts load	8 A/250 V AC, 8 A/24 V DC	60 V DC / 40 V AC 50 Hz, 800 mA permanently / 2 A @ 1s
Durability	2 × 10 ⁷ cycles	–
Relay switching	Protected against accidental switching. It is separated slave unit for RTU7 series.	
Consumption	3 W	2W
Connectors	2 × WAGO 231-311/026-000, part of delivery	
Wire cross-section	0.08 ÷ 2.5 mm ²	
Position in bus	Any	



Relay output connection on card D010-U



All outputs of individual connectors on card DO20S-U are connected to a common potential which can have both polarities.

Front panel with connectors on individual DO card types