

4 STAGE DIGITAL OUTPUT MODULE

IO/DOM4 FEATURES

- Microprocessor based technology, enables the module to provide a 4-stage sequence, step or 16-stage binary control
- Provides a soft start delay mode option
- LED indication

The IO/DOM4 is designed to provide digital (relay) control from a 0-10V signal input. A 4 way DIL switch is used to select the function/s required and a potentiometer setting is available to provide a delay On time (in sequence/step mode) before the relays are energised or to set the delay time On when in Timed Start Sequence mode (SW4 On) used for soft start applications.

A volt free digital input is also available to reverse the operation when Sequence or Step Sequence modes are selected.

SPECIFICATION



Power Supply:	24V AC/DC +/-10%
Frequency (AC supply):	50/60 Hz
Input:	0-10V DC control (load 5mA max)
Output:	4 x Voltfree changeover relays Rated 230 VAC, 5A (resistive load only)
Power Consumption:	100 mA max (all relays on)
LED Indication:	Power On / Relays energised
Selectable Options:	Manual / Auto / Off (relay outputs) Sequence /Step / Binary / Time Delay Delay Time 0 – 100 secs or 0 – 10 mins
Terminals:	1.0mm recommended 2.5mm max Recommended/highest tightening torque 0.5/0.6 Nm (4.42/5.31 lbf in)
Operating Temperature:	0 to 50°C
Operating Humidity:	5-80% non-condensing
Installation:	Intended for indoor use only, Pollution Degree 2
Dimensions:	82mm high, 91 mm wide, 50mm deep
Mounting:	DIN Rail
Country of Origin:	UK
Product Code:	IO/DOM4

SAFETY INFORMATION

Warning – Risk of Electric Shock

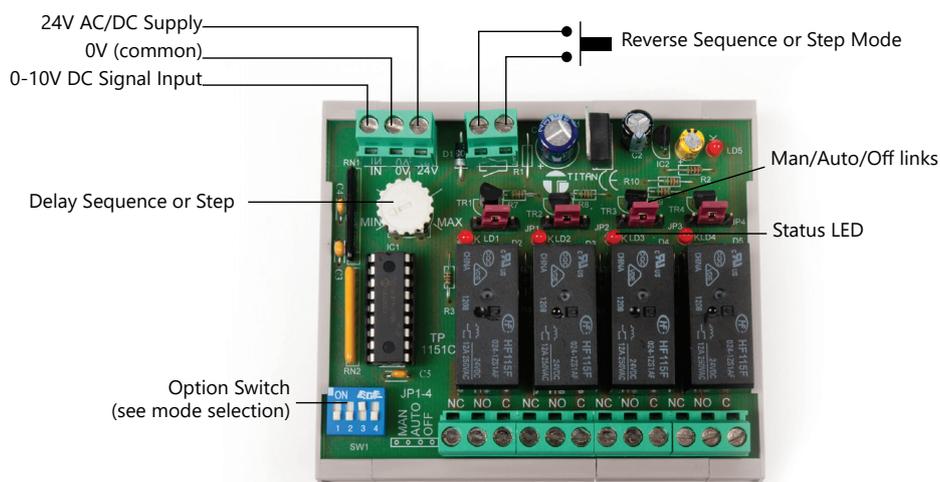
This product contains relay contacts intended for switching mains voltages up to 230 VAC.

- Relays must all be connected to the same phase, single phase use only.
- Installation must be carried out by qualified personnel only.
- Disconnect all power supplies before installation or servicing.
- The product must be installed within a suitable control panel enclosure.
- Do not operate the module outside its DIN housing.
- Do not exceed the stated relay contact ratings.
- Ensure wiring complies with local electrical regulations.
- Intended for indoor use only (Pollution Degree 2).

INSTALLATION

- Isolate all supplies before wiring.
- Use conductors rated for the applied voltage and current.
- Maintain separation between mains wiring and low-voltage control wiring.
- Tighten terminal screws to manufacturer’s recommended torque.
- Ensure the control panel enclosure is properly earthed.

CONNECTIONS



MODE SELECTION

SW	1	2	3	4
Sequence	Off	Off	Off	Off
Step	On	Off	Off	Off
Delay Time	Off	On	Off	Off
Binary	Off	Off	On	Off
Delay Start	Off	Off	Off	On
Note: SW2 ON Delay = 0-10 mins SW2 OFF Delay = 0-100 secs				

OPERATION MODES

Four modes of operation are provided as shown below:

Sequence 1 (all switches off)

The four relays operate in sequence (see table). The switching differential on a decreasing signal is 0.5V.

Sequence 2 (SW1 on)

Each relay operates independently in a step sequence (see table). The switching differential on a decreasing signal is 0.5V.

Timing Potentiometer (Range 0-100 seconds or 0-10 minutes with SW2 on)

This is used to provide an adjustable time delay between relays in the sequence and step sequence modes. (See also Time Start Delay mode).

Volts	Sequence				Step			
	R1	R2	R3	R4	R1	R2	R3	R4
0V	Off	Off	Off	Off	Off	Off	Off	Off
2.0V	On	Off	Off	Off	On	Off	Off	Off
4.5V	On	On	Off	Off	Off	On	Off	Off
7.0V	On	On	On	Off	Off	Off	On	Off
9.5V	On	On	On	On	Off	Off	Off	On

Binary (SW3 on)

In this mode the timing potentiometer and the reverse action input switch are not used and the relay operational delay is a function of the control input voltage level being steady for 2 consecutive 1 second readings. The binary switching threshold is +/- 0.3V and any fluctuations in the signal input voltage will affect the performance of the binary switching operation.

DIGITAL OUTPUT BINARY COMBINATION																
Volts <0.3V>	0	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8	8.4	9.0
R1	Off	On														
R2	Off	Off	On	On												
R3	Off	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On	On	On	On
R4	Off	On														

Note: Input signals must be stable and free from electrical noise to prevent unintended relay operation. Where long signal cables are used, appropriate shielding and cable routing practices should be followed.

Time Start Delay (SW4 on range 0-100seconds)

When SW4 is on the 0-10V input signal is not required and the module operates as in a soft start (time delay sequence) across the 4 output relays on power up. The delay start time of R1 and between each relay operation is set on the potentiometer range 0-100 seconds. This mode provides an application for sequential soft start of electrical loads for 4 circuits.

EMC INSTALLATION GUIDANCE

To maintain compliance with EN IEC 61000-6-2 and EN IEC 61000-6-3:

- Keep relay load wiring separate from low-voltage control wiring.
- Avoid routing mains cables adjacent to signal cables.
- Use appropriately earthed metal control panels.
- Keep cable lengths as short as practicable.
- Use suppression devices on inductive loads where required.

For further install and setup information please contact technical@titanproducts.com