DUEMMEGI
HOME AND BUILDING AUTOMATION

DFTR: relay output module for one rolling shutter and one generic load

DFTR modules allow to control, through the bus **Domino**, 1 bi-directional motor (e.g. rolling shutter) and a generic load (e.g. Lamp). DFTR module provides a 2-pole terminal block for the connection to the bus; as for almost all modules of **Domino** family, the bus itself carries the power supply for the module operation.

On the top side, the module features a small pushbutton with double function (see the related paragraph) and a green LED that shows the operating status; the same green LED normally flashes every 2 seconds about to signal that the module is properly supplied and operating. A small connector (PRG) allows the connection to the optional tester/programmer.

A 5-pole terminal block allows to connect the bi-directional motor and the lamp. A white label on the top panel allows the writing of the programmed module address for an immediate visual identification.

The **first section** (point 1 of its output address) of DFTR module is specifically developed for up the driving of shutters as explained in the next paragraph.

The **second section** (point 2 of its output address) of DFTR module is specifically developed for ON-OFF driving of lamps for domestic appliances; by one or more pushbuttons connected to one or more input modules (DF4I), it is possible to control the load, directly or through step by step sequences, logic combinations, etc.

For more details about the address assignment and the functions that can be programmed, refer to the related documentation.

The small dimensions of DF2R module allow the housing directly in the standard rectangular wall box, like standard box 503 or similar types, completed by the frame and the cover plate of the preferred manufacturer.

Note: this data sheet applies DFTR module equipped with firmware 6.0 or higher.

Mode of operation

The shutter section of DFTR module automatically performs several functions as here described; assume that the module has been programmed to control a shutter by two push-buttons (**Open** and **Close**) connected to an input module. Pushing and holding down the Open push-button or the Close push-button, the rolling shutter will be opened or closed; releasing the push-button, the rolling shutter will stop in the position reached at that moment.

If the limit switch has been reached before the push-button releasing, the rolling shutter will stop anyway (**provided that the motor assembly includes proper limit switches** to switch off the motor power; these limit switches have no connection with the **Domino** system).

A short touch on Open push-button or on Close push-button causes the movement of the motor until the limit switch is reached or until a programmable time out elapses (complete opening and closing function, called automatic mode). If during the automatic movement any Open or Close button is pushed again, the shutter stops at that position (this operation is called counter-command).

It is also possible to define **centralized** commands ("**Open Priority**" and "**Close Priority**"), that work like local commands as previously defined except that **the priority command is only automatic** and it will be always executed regardless of the status of the rolling shutter (moving or not moving). In other words, if the rolling shutter was moving, **a priority command will be never executed as counter-command.**

Finally, it is possible to define additional commands performing the unconditional **Halt**, allowing to stop the motor regardless of the function currently in execution.

Notes:
- As previously mentioned, DFTR module is not able to identify the moment wherein the limit of allowed movement is reached (both for opening and closing); check that the selected actuator integrates the proper limit switches, otherwise the motor may be damaged.
- To avoid motor damages and dangerous inrush currents, DFTR module automatically wait for 2 seconds before to invert the motor direction.

During the automatic opening and closing functions, the relays driving the motor remain excited even if the limit switch has been reached; DFTR module automatically switch off relays after a predetermined time (called Actuation Time out). This time, by default, is set to 60 seconds but it can be any value in the range 1 to 255 seconds (4 minutes and 15 seconds); if the rolling shutter requires more time (or less) in comparison to default time to move from complete closing position to complete opening position (and vice versa), it's possible to specify the optimal value when programming the module.

If the Actuation time out value has not been specified in the equation, it will be automatically set to the default value (60) by BD-Tools.

Setting Actuation Time out to 0 (zero), the automatic function will be disabled (but this is not true for centralized commands).

It is also possible to define a time, called "Delay from command", which will delay the starting of the shutter in respect to a centralized command; this avoids that all rolling shutters start at the same time.

The "Delay from command", is set by default to 0, but it can be increased up to 255 (4 minutes and 15 seconds).

Programming

The equation controlling the shutter section of DFTR module is similar to the following example:

```
O1.1 = OI1.1 | CI1.2 | OPI3.1 | CPI3.2 | \
       HI5.1
```

In this example, O1.1 is the first output of the DFTR module, I1.1 and I1.2 are the inputs that control both the opening and the closing, I3.1 and I3.2 are the inputs for the centralized opening and closing. Input I5.1 is the Halt command.

More opening and closing inputs (both of local and centralized type) and Halt commands are allowed, simply adding them to the equation.

In the previous example the Actuation Time out, being not specified, is equal to 60 seconds default value; if another value is required by the specific application, for example 40 seconds, simply specify it in the equation like in the following example:

```
O1.1(40)= OI1.1 | CI1.2 | OPI3.1 | \
          CPI3.2 | HI5.1
```

In order to delay the motor start after a centralized command (Delay from command), for example 5 seconds for opening and 10 for closing, specify these values in the equation:
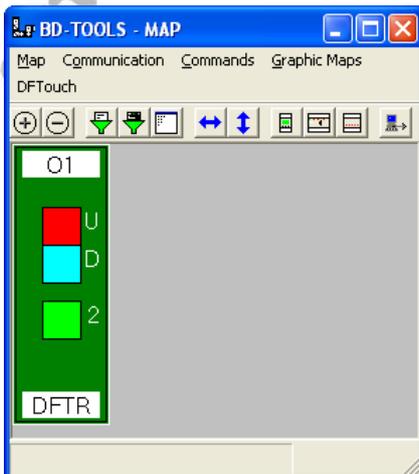
```
O1.1(40)= OI1.1 | CI1.2 | OP(5)I3.1 | \
          CP(10)I3.2 | HI5.1
```

If not specified, the Delay from command will be zero.

Mapping

DFTR module is shown on the map of BDTools (*version 6.0.1 or higher*) like in the picture on this side.

As for all other **Domino** modules, the background of the module is in green color if the module is connected and properly working, otherwise the background is in red color.

As usual, the current status of each output point is represented in red color if the output is ON; in the example of the previous picture, the shutter output is opening (the meaning of symbols are U=Up=Open, D=Down=Close), while the generic output is OFF.

Functions of the local pushbutton

The pushbutton on the module has a double function: pushing it for a time lower than 3 seconds, the module switches to the addressing mode, during which the LED on the module is fixed lighted; the addressing mode will be active until the module receives the address and anyway no more than 10 seconds from the last release of the pushbutton. When the module enters the addressing mode, all outputs will be switched off.

Holding down the pushbutton for more than 3 seconds, the module switches to the test mode; the LED signals this condition by a regular blinking (1s ON and 1s OFF). At every successive pushing of the button the shutter output will be alternatively switched between opening and closing and the relay output between ON and OFF. The module exit the test mode after 30 seconds from the last release of the pushbutton.

Module connection

DFTR module can be connected to one bi-directional motors, supplied at 230Vac and to a additional generic load; following figure shows the proper connections to be made.
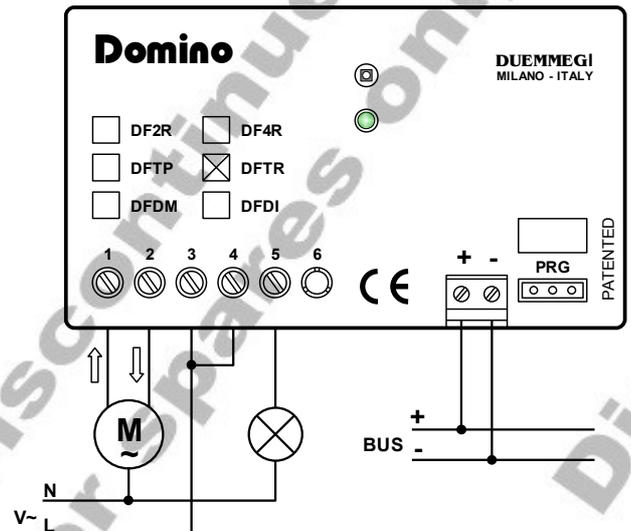
Technical characteristics

Power supply (bus side)	By specific centralized power supply Mod. DFPW2
MAX Contact rating (motor output)	• Resistive load (cosfi = 1): 5A at 250Vac (1250VA) • Single-phase motor: 2.4A at 230Vac (550VA, 0.75HP)
MAX Contact rating (generic load output)	• Resistive load (cosfi = 1): 5A at 250Vac (1250VA) • Inductive load (cosfi = 0.85): 3.6A at 250Vac (900VA) • Capacitive load (C=10uF MAX): 1A at 250Vac (250VA)
MAX switching voltage	250Vac
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

Outline dimensions