

DFTA - DFTE: temperature sensor module

DFTA and DFTE module allow to transmit, through the **Domino** bus, the value of the temperature acquired by a NTC sensor provided together the module.

The differences between DFTA and DFTE modules are the measured temperature range and the resolution as listed in the following table:

	range	resolution
DFTA	-10 ÷ +41.1 °C	0.1 °C
DFTE	-40 ÷ +62.2 °C	0.2 °C

The temperature value measured by DFTA and DFTE modules is reported as Kelvin degrees multiplied by 10; in other words, 0 °C will be reported as 2730, 0.1 °C will be reported as 2731 and so on.

Called x the value read from the module, the formula to convert this value to Celsius value is:

$$T[°C] = (x - 2730) / 10$$

The reversed formula to convert the Celsius temperature value to the Kelvin value multiplied by 10 is the following:

$$T[°K \times 10] = (T[°C] \times 10) + 2730$$

These modules provide a 2-pole terminal block for the connection of the module to the bus; as all modules of **Domino** family, the bus itself carries the power supply for the module operation.

On the top of module, a small pushbutton allows the address programming directly by the bus and a green LED shows when the module is ready to receive the address itself; the same LED normally flashes every 2 seconds about to signal that the module is properly operating.

A small connector (PRG) allows the connection to the optional tester/programmer.

A 2-pole terminal block allows to connect the provided temperature sensor. A white label on the top panel allows the writing of the assigned address for an immediate visual identification.

The small dimensions of DFTA and DFTE modules allow the housing directly in a standard wall box; the very small sensor may be easily put in the panel of the same wall box.

DFTA and DFTE modules take only one address in the **Domino** bus system.

For more details about the procedure to assign the address to the module, refer to the related documentation.

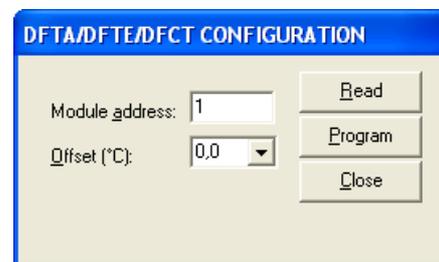
Offset correction

Warning: this technical sheet applies to DFTA and DFTE modules version D32xxxx or higher.

Using the support software BDTools (version 4.0.4 or higher) it is possible to correct, according to the own requirements, the temperature value measured by the module.



To set this correction value (offset), select from the main menu of BDTools the item "Programming" and then "DFTA/DFTE/DFCT Configuration"; the following window will appear:

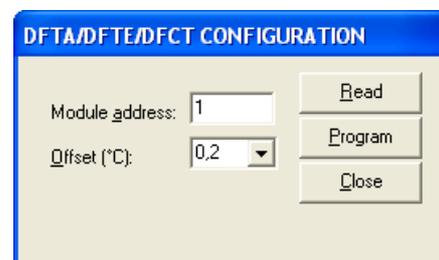


Enter in the first text box the address of the DFTA or DFTE module to be configured; then choose the offset to be assigned to that module clicking by the mouse on the arrow on the right side of the "Offset" text box. Allowed values are in the range -12.8 to +12.7 degrees.

Press then the Program button to send the chosen value to the module. The Read button allows to check the current configuration of the module having the address specified in the related text box.

For instance, if the value +0.2 has been selected as shown in the following figure, then DFTA or DFTE module will sum the value 0.2 to the temperature as read from the sensor; if this last one measures 25.3°C, then the temperature value sent on the bus will be:

$$25.3 + 0.2 = 25.5°C$$



If on the contrary the offset is set to -0.2, then the temperature value sent on the bus will be:

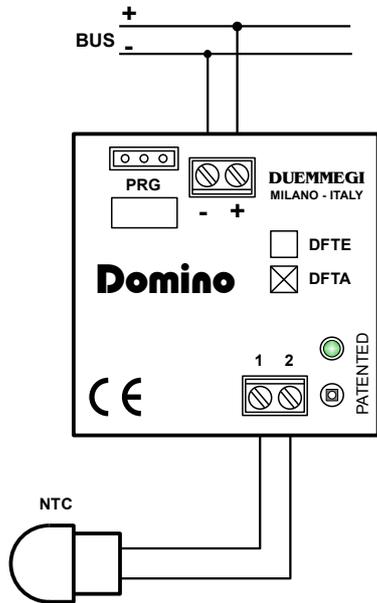
$$25.3 - 0.2 = 25.1°C$$

Note: the chosen offset value will be retained in the module memory even if an interruption of the power supply occurs.

DFTA - DFTE

Module connection

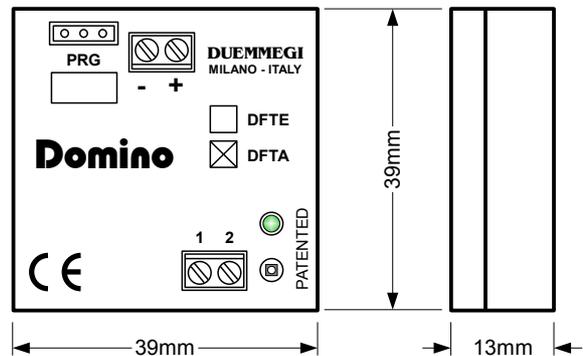
DFTA and DFTE modules must be connected to **Domino** bus and to the temperature sensor as shown in the following schematic diagram.



Technical characteristics

Power supply (bus side)	By specific centralized power supply mod. DFPW2
Temperature sensor	NTC
Temperature range	DFTA: -10 ÷ +41.1 °C DFTE: -40 ÷ +62.2 °C
Resolution	DFTA: 0.1 °C DFTE: 0.2 °C
MAX measurement error	±0.5 °C
Linearity	±0.5 °C
Temperature offset correction	From -12.8°C a +12.7°C
Max length for sensor wires	10 meters
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

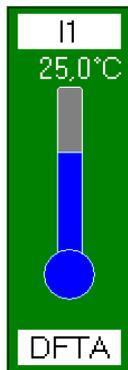
Outline dimensions of the module



Mapping

DFTA and DFTE modules are displayed on the map of BDTools as in the picture on this right side. As for all **Domino** modules, the background is in green color if the module is connected and properly working, otherwise the background is in red color.

The bar graphs show the temperature level measured by the module, while the number over the bar show the temperature in numerical format (Celsius degrees).



Outline dimensions of the sensor

