

### PROGRAMMABLE

#### DESCRIPTION

The DMT-1040 is a programmable multifunction transducer with an RS-485 bus interface (MODBUS®). It supervises several variables of a polyphase electrical power system simultaneously and generates 4 proportional analog output signals. The RS-485 interface enables the user to determine the number of variables to be supervised (up to the maximum available). The levels of all internal counters that have been configured (max. 4) can also be viewed. Provision is made for programming the DMT-1040 via the bus. A standard EIA 485 interface can be used, but requires a load resistor for the bus. This interface is needed for bus operation to configure the device address, the baud rate, and possibly increasing the telegram waiting time defined in the MODBUS® protocol (if the master is too slow).

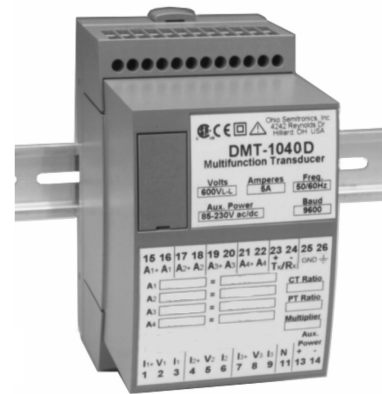
The DMT-1024/1042 series multifunction programmable transducers simultaneously measure several variables of a polyphase electric power system and process them to produce 2 or 4 analog output signals. Also 2 or 4 pulse outputs are available for signaling consumption quantities or limit thresholds. For two of the limit outputs, up to three measurands can be logically combined.

DMT-Series transducers are equipped with an RS-232 serial interface to which a PC with the DMT-Config software can be connected for programming or accessing and executing useful ancillary functions. Among the items which can be programmed are: all common types of electrical systems, the measured variable, rate values for input variables, output variable response characteristics, etc.

Ancillary functions include a power system check, a provision for displaying the measured variable on a PC, the simulation of the outputs for test purposes, and a facility for printing nameplates. The transducer fulfills all the essential requirements and regulations concerning electromagnetic compatibility (EMC) and safety (IEC 1010 and EN 61 010). It was developed and is manufactured and tested in strict accordance with the quality assurance standard ISO 9001 and carries CE and CSA certifications.

#### MEASURED QUANTITIES (per-phase and polyphase)

- Current and Voltage (RMS)
- Active, Reactive and Apparent Power
- Active, Reactive & Apparent Energy (consumption)
- Cos  $\Phi$ , Sin  $\Phi$ , Power Factor, Frequency



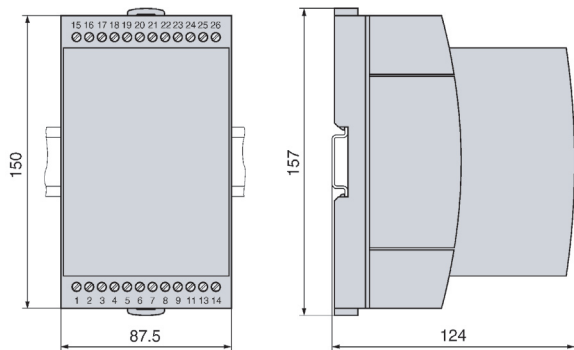
The universal basic version DMT-1040D in housing T24, clipped onto a top-hat rail.

#### FEATURES

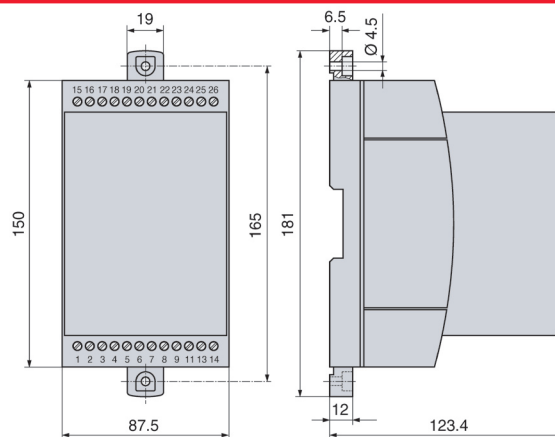
- Simultaneous measurement of several variables of a heavy-current power system, rated current 1 to 6 A, rated voltage 57 to 400V (phase-to-neutral) or 100 to 693V (phase-to-phase)
- For all Heavy-Power System Variables
- 4 Universal Analog Outputs (Programmable)
- Input Voltage up to 693V (Phase to Phase)
- RS-485 Communications with MODBUS® protocol
- High Accuracy  
Voltage and Current ..... 0.2% F.S.  
Watts ..... 0.25% F.S. (under reference conditions)
- Up to 4 integrated Power Meters
- Universal AC/DC Power Supply
- Windows software with password protection for programming, data analysis, power system status simulation, acquisition of meter data and making settings

#### STANDARD OUTPUTS DMT-SERIES

OUTPUTS	4 ANALOG	2 ANALOG 4 PULSE	4 ANALOG 2 PULSE
1mA	DMT-1040B	DMT-1024B	DMT-1042B
20mA	DMT-1040E	DMT-1024E	DMT-1042E
5V	DMT-1040X5	DMT-1024X5	DMT-1042X5
10V	DMT-1040D	DMT-1024D	DMT-1042D



DMT in housing T24 clipped onto a top-hat rail (35mm X 15mm or 35mm X 7.5mm)



DMT in housing T24, Screw-Hole Mounting Brackets (35mm X 15mm or 35mm X 7.5mm)

### SPECIFICATIONS

#### DMT-1040

#### MODBUS® OUTPUTS →

Bus Interface.....	RS-485
Terminals.....	Screw Terminals
Cable.....	Shielded Twisted Pair
Max. Distance.....	1200m (4000ft)
Baud Rate.....	1200-9600 (Programmable)
Number of Nodes.....	32 (Including Master)

#### DMT-1024/1042

#### PULSE OUTPUTS

Type of Contact.....	Open Collector
Number of Pulses.....	Programmable
Pulse Duration.....	≥100ms
Interval.....	≥100ms
Power Supply.....	8-40V
Output Current.....	ON..... 10-27mA
	OFF..... ≤2mA

The digital outputs conform to DIN 43 864. The pulse width can not be programmed or reconfigured in hardware.

### SPECIFICATIONS COMMON TO BOTH

#### INPUTS →

Voltage.....	57-400V (Phase to Neutral) 100-693V (Phase to Phase)
Current.....	1-6A
Frequency.....	50-60Hz.
Power Consumption	
Current.....	(0.3VA) (1/5A)
Voltage.....	≤V <sup>2</sup> /400kΩ
Continuous Overload	
Current.....	10A
Voltage.....	120% Maximum Input

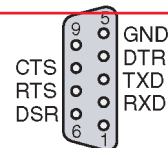
#### OUTPUTS →

Analogue Outputs	
DC Current.....	0 - ±1mA or 0 - ±20mA
Burden Voltage.....	±15Vdc (750Ω)
DC Voltage Outputs.....	0 - ±5V or 0 - ±10V
Load Capacity.....	2mA Max.
Voltage Limiting (Rext=∞).....	≤30V
Current Limit.....	mA Output..... 125% F.S. Output
	V Output..... 40mA

#### ACCURACY

Voltage & Current.....	0.2% F.S.
Power.....	0.25% F.S.
Reactive & Apparent.....	0.5% F.S.
Measurement Cycle.....	0.25 - 0.5s @ 60Hz
Response Time.....	1 - 2 X Measurement Cycle
Output Ripple.....	<0.5%

#### DMT DSUB 9-Pin Socket



#### INSTRUMENT POWER →

Voltage.....	85-230VDC/AC (dc or 50/60 Hz)
Power Consumption.....	Approx. 10VA
Programming Connector on Transducer	
Interface.....	RS-232 C
DSUB Socket.....	9-Pin

#### AMBIENT CONDITIONS

Nominal Range of use for Temperature.....	0 - 15 - 30 - 45°C
Temperature Effect.....	±0.1%/10°C
Relative Humidity.....	≤75%

#### SAFETY

Protection Class.....	II
Enclosure Protection.....	IP 40, Housing IP 20, Terminals
Overvoltage Category.....	III

#### DIELECTRIC TEST VOLTAGES

50Hz, 1min. according to DIN EN 61 010-1	
5550V, inputs versus all other circuits as well as outer surface.	
3250V, input circuits versus each other.	
3700V, power supply versus outputs as well as outer surface.	
490V, outputs versus outer surface.	

#### PHYSICAL

Net Weight.....	1.9 lbs.
Termination.....	14 AWG max.