



- Suitable for three phase supplies using current transformers (1A or 5A secondary)
- MID Approved
- Accuracy Class C ($\pm 0.5\%$)
- 4 module width, DIN rail installation
- Touch key design for easy setup and viewing of measurements
- Supports bi-directional measurement of active and reactive energy
- Multi-function parameter measurement for voltage, current, active power, reactive power, apparent power and power factor
- Offers RS485 Modbus communication and one passive pulse output

The VDT45M energy meter supports three phase and single phase loads using current transformers with a 1A or 5A secondary. This MID Approved meter can be used for billing applications and is highly accurate, class C (Cl. 0.5). It measures bi-directional energy, voltage, current, active power, reactive power, apparent power and power factor.

It provides an RS485 communication interface supporting Modbus and features a clear LCD screen. The touch key allows easy viewing of parameters and setup operations while the password protection function ensures data security.

Electrical Characteristics

Supply voltage	120 to 420 V DC
Power consumption	<4VA/0.5W
Rated voltage (Un)	230/400V AC
Operational voltage	L-N: 30 to 350V AC; L-L: 30 to 500V AC
PT1 (Primary)	30 – 500,000V
Impedance of voltage measurement circuit	1M Ω
Overload capacity of voltage	2 x Un for 1 second
Rate current(Ib) I	5A
Max. current (Imax)	6A
Minimum current (Imin)	0.05A
CT1 (Primary)	1 – 9999A

Impedance of current measurement circuit	<0.01 Ω
Overload capacity of current	20 x Imax for 0.5 second
Operational frequency range	45 - 65Hz
Pulse constant	5000 imp/kWh
Display	LCD with backlight
Max. reading of energy	9999999.9 kWh/kVArh
Measurement type	3P4W, 3P3W, 1P2W

Measurement Accuracy

Voltage, Current	$\pm 0.5\%$
Active power	$\pm 0.5\%$
Reactive power	$\pm 2.0\%$
Apparent power	$\pm 0.5\%$
Active energy	$\pm 0.5\%$
Reactive energy	$\pm 2.0\%$
Power factor	$\pm 0.5\%$
Frequency	$\pm 0.1\%$

Environmental Characteristics

Operating temperature	-25 - +55 $^{\circ}$ C
Storage temperature	-40 - +80 $^{\circ}$ C
Humidity	< 90%, non-condensing
Pollution degree	2
Altitude	Up to 2000m

Vibration	10 Hz to 150Hz, IEC 60068-2-6
IP degree of protection	IP51 front display IP30 meter body

Electromagnetic Characteristics

Electrostatic discharge	±8kV (contact discharge) ±15kV (air discharge)
Immunity to radiated fields	10V/m. 80 - 2000MHz
Immunity to electrical fast transients	±4kV
Immunity to surges	±4kV
Immunity to conducted disturbances	10V. 0.15-80MHz
Immunity to magnetic fields	IEC 61000-4-8
Immunity to voltage dips	IEC 61000-4-11
Radiated emissions	Class B, according EN55011
Conducted emissions	Class B, according EN55011
Harmonics emissions	IEC 61000-3-2

Safety

Overvoltage category	CAT III. according to IEC 61010-1
Measurement category	CAT III, according to IEC 61010-1
Insulation	AC Voltage Test : 4kV for 1 minute

Protective class	II, according IEC61010-1
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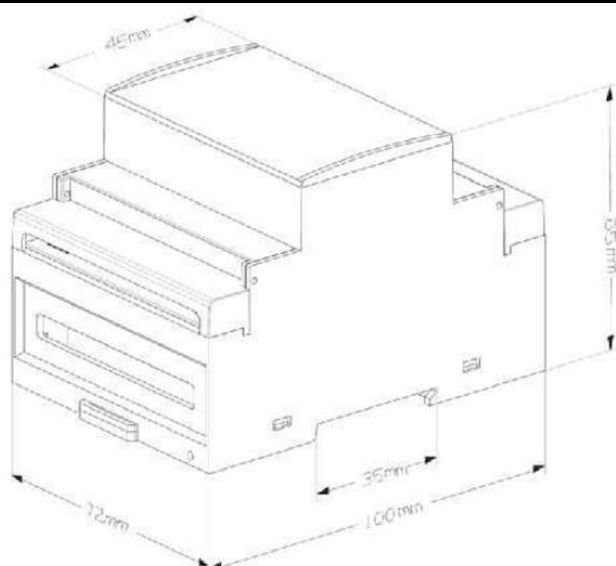
Communication

Interfaces standard and protocols	2-wire RS485, Modbus
Baud rate	1200 to 38400 bps, default is 9600 bps
Parity bit	None, Even, Odd. default is None
Stop bit	1 or 2, default is 1
Response time	< 100ms
Transmission mode	half-duplex
Transmission distance	Up to 1000m
Max. Bus loading	64 pc

Pulse Output

Interface type	Open collector opto-coupler
Pulse constant	Per pulse equal 0.001/ 0.01/0.1/1 kWh/kVAh
Pulse width	60 / 100 / 200 milliseconds
Pulse output type	Active energy / Reactive energy (Tot, Imp & Exp)
Class	Class A, according to IEC 62053-31
Input voltage	5 to 27 VDC

Dimensions



Wiring

