



# Stephen P. Wales Ltd

The Old Brewery Works, Lr Ellacombe Church Rd,  
Torquay. UK. TQ1 1JH  
Tel: 01803 295430 Fax: 01803 212819  
email: sales@stephenpwales.co.uk



**TP100 MT300**  
100amp 3phase Meter

The **MD300** and **MT300** electronic polyphase meters are designed for measurement of electric energy in households, at commercial and small industrial customers in 3- or 4-wire 3-phase networks respectively. The meters can be connected directly or via instrument transformers and comply with the IEC 61036 standard for class 2 or 1. They are manufactured in compliance with the ISO 9001 standard.

### Metering system

The metering system is 2-element in the MD300 meters and 3-element in the MT300 ones. The metering element is based on Iskraemeco SPS (Smart Power Sensor) technology. The SPS consists of the Hall-effect sensor, analogue and digital circuitry integrated in a single silicon crystal. The metering element is shielded against external magnetic fields and are protected against over-voltages and high frequency disturbances. Such a design of metering elements assures excellent metering features, high meter reliability, negligible effect of influence quantities and requires no meter calibration over its entire life span.

### Meter case

Ergonomically designed meter case is made of self-extinguishing polycarbonate and can be recycled at the end of the meter life. It assures double insulation and IP53 protection level against dust and water penetration. Overall and fixing dimensions comply with the DIN 43857 standard.

### Register

The meters are equipped with one or two 7-digit cyclometric registers (6+1 or 5+2 decimals). The figure size is 4.8x2.5 mm. At direct connected meters the decimal drum can be coded or covered on request and has 100-division marking on its circumference. The register is driven with a step motor that is shielded against external magnetic fields.

### Indicators

A red or yellow LED is used for meter testing, calibration and meter operation indication. Two tariff rate meters are equipped with two green LEDs that indicate valid tariff. On request a red LED is built into the MT300 meters for indicating line-to-neutral voltage unbalance or a line failure.

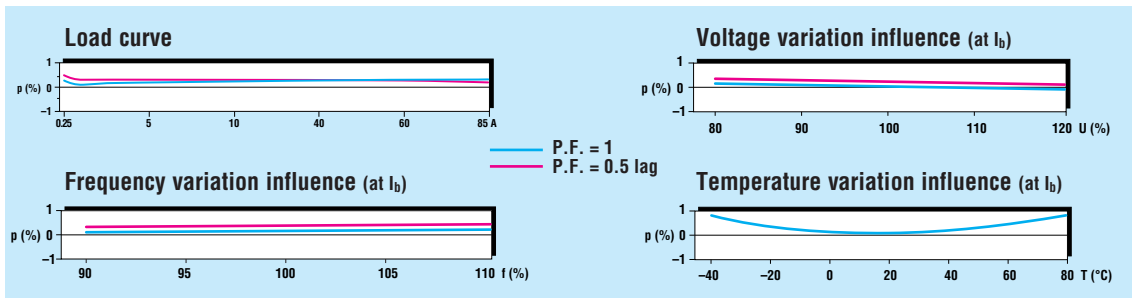
### Inputs

Two rate meters are equipped with 1 or 2 auxiliary terminals for external tariff change-over.

### Outputs

The meters can be optionally equipped with one of the following pulse outputs: SO (IEC 60253-31 class A / DIN 43864) for transmission distance up to 0,5 m or optoMOS relay with a make contact (potential free) for transmission distance up to 1 km. On request the pulse width at the relay pulse output can be set in range 80 ms up to 1.5 sec as well as the pulse constant can be set in compliance with the customer's request.

### TYPICAL METER CURVES



### METER TYPE DESIGNATION

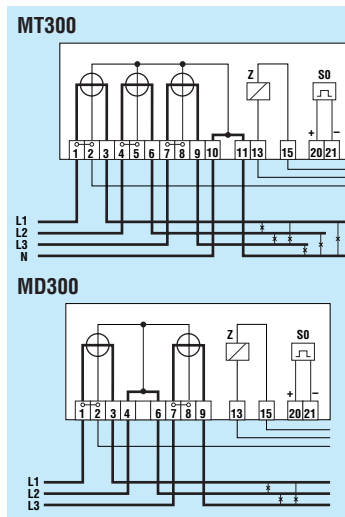
#### MT300-D1A51-V12G12-F

- M** – electronic meter
- D** – polyphase two-element meter
- T** – polyphase three-element meter
- 300** – meter case by DIN 43657
- D1** – terminal block for  $I_{max} = 85$  A
- D2** – terminal block for  $I_{max} = 120$  A
- T1** – terminal block for  $I_{max} = 5$  A
- A** – active energy
- 5** – class 2
- 4** – class 1
- 1** – energy flow direction A+
- 2** – energy flow direction A+ and A-
- V12** – 2-rate meters (an input for tariff change-over)
- G12** – no mark for single rate meters
- L11** – SO pulse output, optoisolated (option)
- L11** – solid state relay pulse output (option)
- F** – indicator of line-to-neutral voltage unbalance (option at MT300 meters)

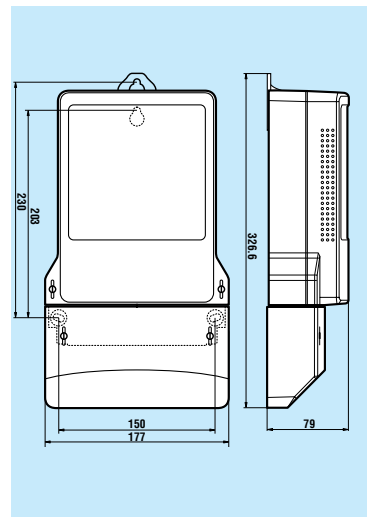
### TECHNICAL DATA

Accuracy class (IEC 61036)	.2 or 1	
	direct connected	transformer operated
Basic current $I_b$	5 A, 10 A	1 A
Maximum current $I_{max}$	85 A, 120 A	6 A
Starting current	0.004 $I_b$	0.002 $I_b$
Thermal current	.12 $I_{max}$	
Short-circuit overcurrent	.30 $I_{max}$	
Reference voltage $U_n$	MT300	3x58/100 V, 3x63/110 V, 3x230/400 V, 3x220/380 V, 3x240/415 V
	MD300	3x100 V, 3x110 V, 3x230 V, 3x220 V, 3x240 V
Voltage range	.08 $U_n$ to 1.15 $U_n$	
Reference frequency $f_r$	.50 Hz or 60 Hz	
Operating temperature range	-40°C to +60°C	
Storage temperature	-50°C to +80°C	
Burden:		
Voltage circuit	<2 W / 10 VA per line	
Current circuit	<0.1 VA per line	
Dielectric strength	.4 kV, 50 Hz, 1min.	
Impulse voltage	.12 kV, 1.2/50 $\mu$ s (auxiliary circuits: 6 kV, 1.2/50 $\mu$ s)	
Pulse output:		
SO	$T_i > 30$ ms,	
pulse constant	.2 Wh/imp (for $I_b=10$ A), 1.6 Wh/imp (for $I_b=5$ A)	
optoMOS relay	$T_i = 80$ ms (other values $T_i$ on request)	
pulse constant	.10 Wh/imp, 1 Wh/imp (transformer operated meters)	
Mass	approx. 1.2 kg	

### CONNECTION DIAGRAMS



### OVERALL AND FIXING DIMENSIONS



Owing to periodical improvements of our products the supplied products can differ in some details from the data stated in the prospectus material.