

### Introduction

The New DTS 541 multifunction meter introduced by Autometers is to address the requirement for a low cost MID approved meter with a pulse output and a range of displays to help the engineer assess the load accurately.

The DTS 541 meter is available in two versions, 100 amp direct connected with large diameter cable holes and the 5-amp Current Transformer operated meter for loads of 100 amps and above.

The meter has a large display with a back light giving a clear and easy to read display in any conditions, the large numbers and the choice of energy registers pre-programmed in the meter make it the ideal electricians choice.

The DTS 541 multifunction meter can be used in all applications where the energy is to be monitored and the meter used for billing purposes.

### Specifications

The Energy meter meets the requirements of:

#### IEC62052-11

Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 11: Metering equipment.

#### IIEC 62053-21 (2003)

Electricity metering equipment (a.c.) – Particular requirements –Part 21: Static meters for active energy (classes 1.0 and 2.0).

#### EN 50470-1

Electricity metering equipment (a.c.) Part 1: General requirements, tests and test conditions – metering equipment (class indexes A, B and C).

#### EN 50470-3

Electricity metering equipment (a.c.) Part 3: Particular requirements – static meters for active energy (class indexes A, B and C).

#### DIN 43 857 T.2 09/1978

Watt-hour meters in moulded insulation case without instrument transformers, up to 100 A rated maximum current; principal dimensions for poly-phase meters.

#### DIN 43 857 T.5 05/1998

Watt-hour meters in moulded case without instrument transformers up to 100 A rated maximum current – Part 5: Principal dimensions for terminal cover.

#### DIRECTIVE 2004/22/EC

DIRECTIVE 2004/22/EC of The European Parliament and of The Council of 31 March 2004 on measuring instruments (text with EEA relevance).

### Features

Optical communication  
Multi tariffs

#### Measurement

- Measure active and reactive power total and in each phase and tariff
- Measure instantaneous data:
  - Three phase voltage (V)
  - Three phase current (A)
  - Total and three phase active power (kW)
  - Total and three phase reactive power (kvar)
  - Total and three phase apparent power (kVA)
  - Three phase export active power (kW)
  - Three phase export active power (kvar)
  - Total and three phase PF
  - Voltage and current angle (A/B/C)
  - Angle Ua-Ub
  - Angle Ua-Uc

#### TOU

- Tariff control available, up to 4 tariffs. Step tariff is also available.
- 10 period, 8 day tables, 8 week tables, 10 seasons and 100 special holidays

#### Event

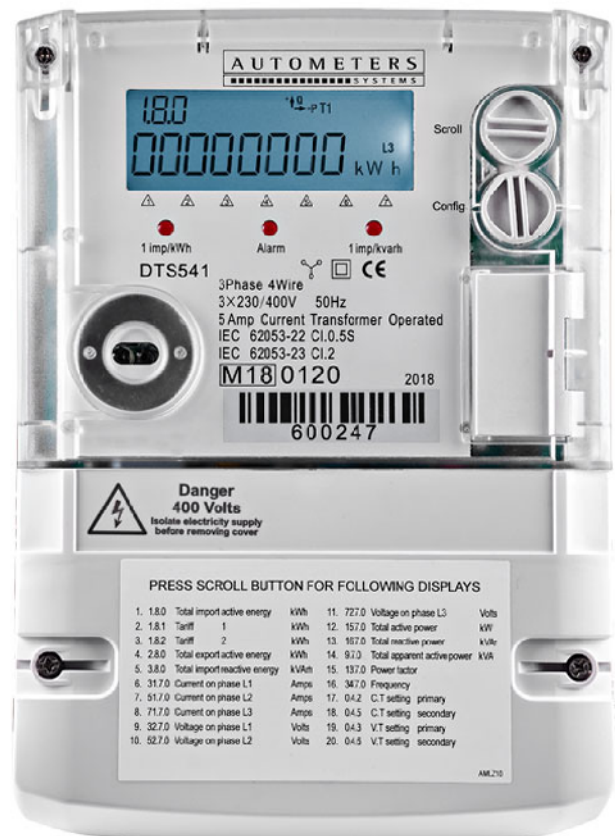
Record latest 100 times of the following event:

- RTC change
- Low battery
- Clear event record
- Tampering event

# DTS 541 Multifunction Meter

Three Phase, Four Wire, kWh Meter with built in pulse output. MID Approved B & D

230/400 Volt 50 Hz 100 amp or 5 amp C.T Operated



**KEMA** Laboratories

MID Approved "B" and "D" Accuracy class 1/0  
Document number 1385-17

- MID Approved "B" and "D" for revenue collection
- Small and compact in size (170 x 250.5mm)
- Large and clear display for easy reading
- Pulse Output: 1 imp/kWh
- Large terminal connection holes (8.5mm diameter)
- Extended terminal cover
- The display indicating individual phase voltages which are connected (L1, L2, L3)

#### Billing

Storage 12 times billing data  
Load control  
Up to 8 channels

#### Demand

- Configurable demand period
- Support both block type and split type demand Record import/export
- active Max. Demand total and each tariff
- Record import/export apparent Max. Demand total and each tariff

#### Display

- 3 LED indicators for active pulse, Alarm and credit status.
- LCD size is more than 13cm .
- 3 display modes available: scrolling display, manual display and power-off display
- Display contents are configurable
- Display digits: 8
- Backlight is available for weak light condition

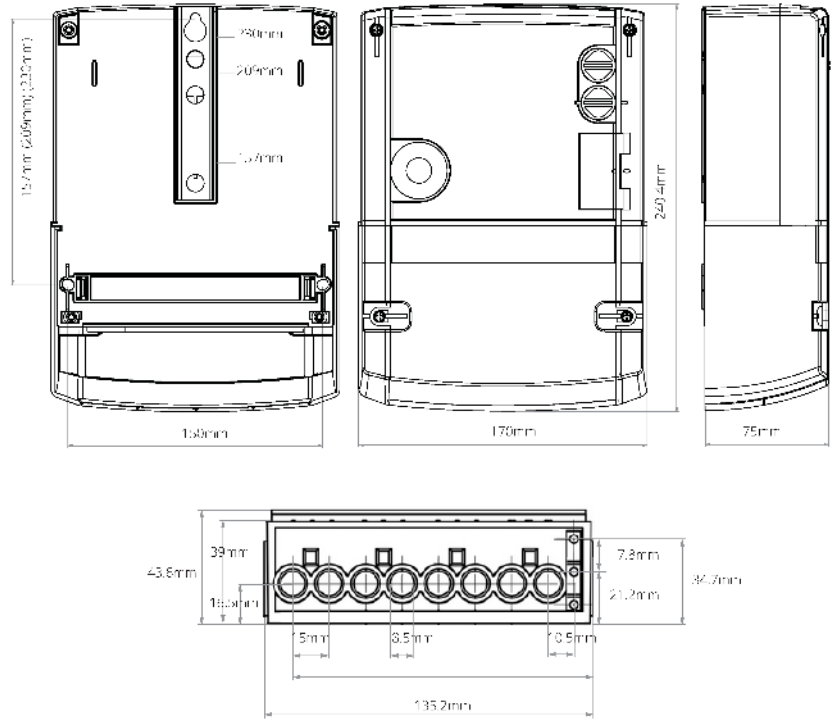
#### Tamper-proof

- Meter/terminal cover open
- Magnetic influence
- Reversed phase sequence
- Power off
- Current unbalance
- Voltage unbalance
- Energy reverse of each phase

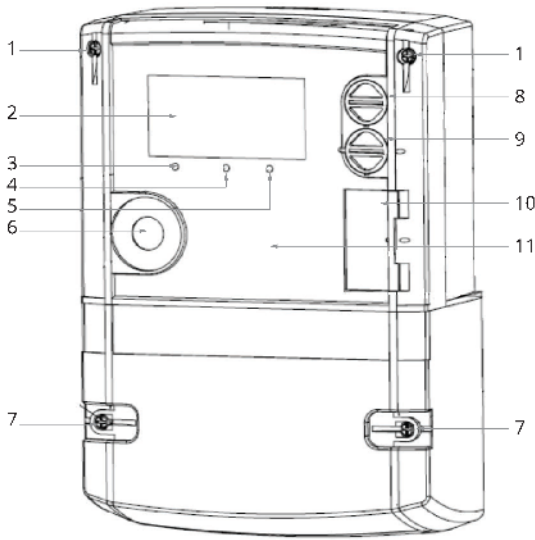
## Technical overview

TYPE	PARAMETER
Standard	IEC 62052 11, IEC 62053 21, IEC 62053 22, IEC 62053 23, IEC 62056 21, IEC 62056 61, IEC 62056-63, IEC 62056-43, IEC 62056-42
Accuracy	DT: Active Class 1.0 Reactive Class 2.0 CI: Active Class 0.5 Reactive Class 2.0
Rated voltage	3x230/400V, 3x240/400V
Operation voltage range	0.9Un-1.1Un
Current	
Basic current	5A, 10A
Maximum current	6A, 10A, 60A, 100A
Starting current	0.004Is
Power consumption	
Voltage circuit (Uh)	<1W/2VA
Current circuit (Ic)	<1VA
Frequency	60Hz
Temperature	
Operating temperature	-25°C to +70°C
Storage and transportation temperature	-70°C to +85°C
Humidity	<95% @ 45°C IEC 62052 11
Protection class	IP54
RTC	<0.5s/day (in 23°C)
Insulation strength	
AC voltage test	4kV, 1 min
Impulse voltage test	6kV, 1 min
EMC	
Electrostatic discharges (contact discharges)	8kV
Electrostatic discharges (air discharges)	15kV
Surge immunity test	4kV
Fast transient burst test	4kV
Electromagnetic RF fields	10V, 150kHz-80MHz
Battery	replaceable
Meter case material	PC
Communication	Optical communication RS485, protocol DLMS
Dimension	240.2mm x 170mm x 75mm
Weight	Approx 1.5kg

## Dimensions



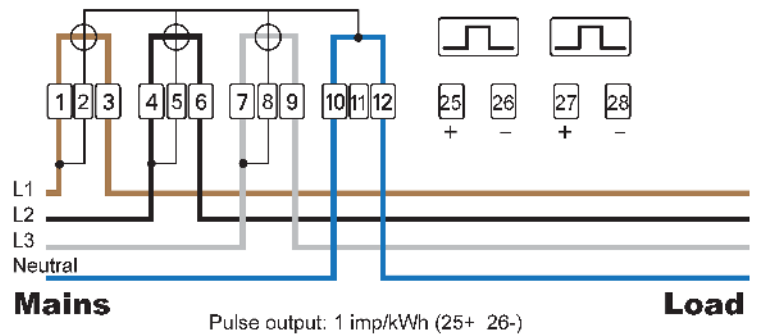
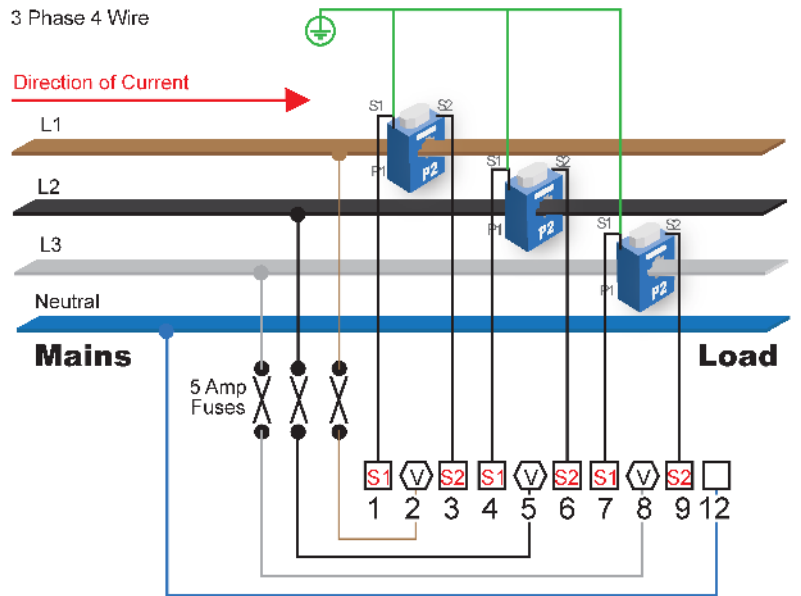
## Appearance



- Meter cover screw
- Window for LCD display
- Active energy (imp/kWh)
- Alarm indicator
- Reactive energy (imp/kvarh) pulse LED
- Optical communication port for local data reading and parameter setting
- Terminal cover screw (sealed)
- Button for display
- Button for program
- Battery (sealed)
- Nameplate: Containing meter basic parameters and specifications

## Connection diagram

### 3 Phase 4 Wire



**AUTOMETERS**  
SYSTEMS



Ref.DTS541.11.18