

# Electronic energy meters

# ULYS

Total compliance with IEC 61036 standard, class 1



## Numerous advantages:

- Backlit LCD display which can be read when the instrument is disconnected (power reserve)
- Complete range of 6 self-powered meters:
  - Single-phase: 90 A – 230 V direct inputs
  - Three-phase: 90 A – 100 to 400 V direct inputs
  - Three-phase: inputs to 1 A and 5 A – 57.7 to 400 V current transformers
- Single- or dual-tariff active and reactive energy metering
- Zero-resettable meter for periodic energy management
- Measures instantaneous and maximum power
- Current/voltage ratio and programmable pulse transmitter

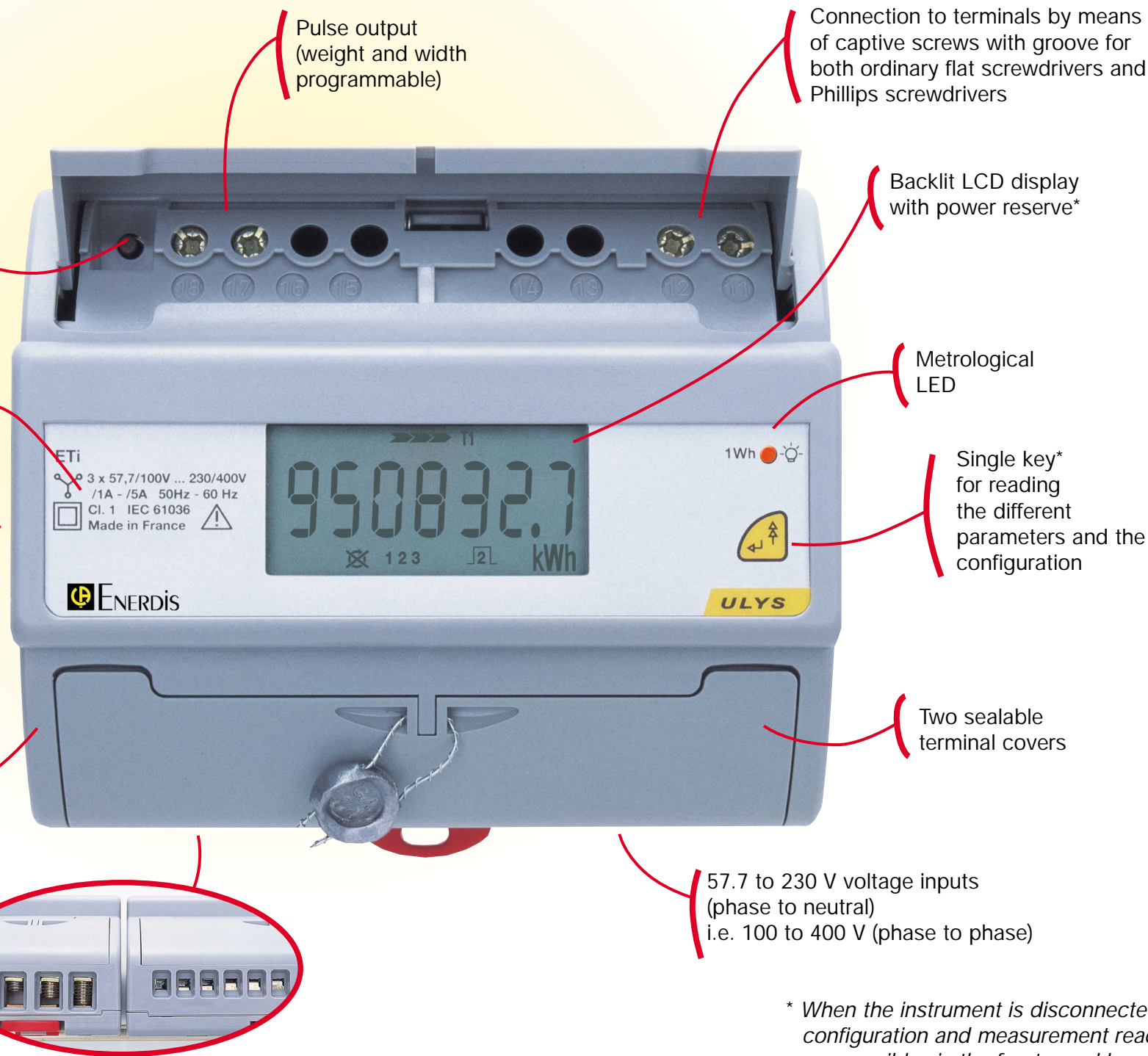


# ULYS

Count on performance!

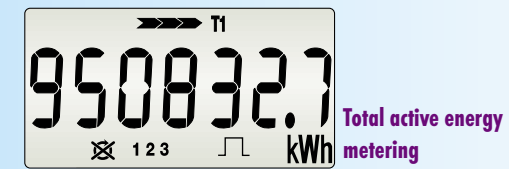
## Electronic energy meters

**Total compliance IEC 61036**



## Display

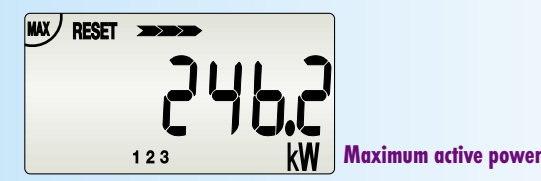
The LCD screen is permanently backlit. Consequently, reading is possible in the cabinets or boxes located in dark rooms. Texts and pictographs help to give the information a high degree of clarity. One interesting function enables a ULYS meter user to display the measurements by pressing once on the scroll key. Here are a few examples of displays:



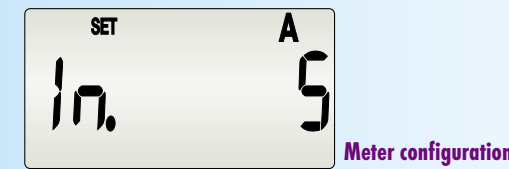
The energy consumed since the meter was enabled comes up directly in the appropriate unit (Wh or varh and their multiples). Three scroll arrows bear witness to the metering. On the «dual tariff» models, T1 or T2 indicate the tariff period in progress. A pictograph is displayed when the meter emits a pulse at the output. 1 2 3 indicates the presence of voltage on the 3 phases. In the event of one or two of them being absent, the corresponding digits flash. In the event of the 3 phases being absent, there can be no more metering, but the registers can be read thanks to the readout unit's power reserve. The connection error pictograph is only displayed if the three-phase meter is incorrectly connected.



The PART pictograph indicates that the value displayed is a relative value, showing the energy consumed since the last reset of the register. The value comes up directly in the appropriate unit. The resettable active and reactive energy meters are reset simply by pressing the scroll key on the front panel.



The instantaneous power (active or reactive) is measured continuously and can be displayed on request, directly in the appropriate unit (W or var and their multiples). The meter stores the value/values thus attained, as is shown by the MAX pictograph. The word RESET flashing indicates that the meter is awaiting a possible reset instruction for the value displayed.



The word SET indicates that we are in the meter configuration mode. This mode enables the following parameters to be entered: current transformer secondary intensity, current transformer x voltage transformer winding ratio, assigning of the pulse to primary or secondary, weight and width of the pulse. On this screen for example, we define whether the meter intensity inputs are at the 5 A or 1 A nominal range.

\* When the instrument is disconnected, the configuration and measurement read-out are possible via the front panel key

Model	Network type	Current input type	Tariff	Energy metering	Zero-resettable meter	Pulse output	Other measurements	CT x VT ratio	Dimensions	Reference
ULYS Emd	single-phase 230 V	15 (90 A) direct	double (T1, T2)	active (T1 & T2)	yes	yes, one	P, Pmax (T1 & T2)	-	4 modules	CEMD 1001
ULYS ETd	three-phase 100 to 400 V	15 (90 A) direct	single	active	yes	yes, one	P, Pmax	-	7 modules	CETD 1001
ULYS ET	three-phase 100 to 400 V	CT 1 or 5 A, not insulated	single	active	yes	yes, one	P, Pmax	programmable	7 modules	CETS 1001
ULYS ETi	three-phase 100 to 400 V	CT 1 or 5 A, insulated	single	active	yes	yes, one	P, Pmax	programmable	7 modules	CETi 1001
ULYS ETDT	three-phase 100 to 400 V	CT 1 or 5 A, insulated	double (T1, T2)	active (T1 & T2)	yes	yes, one	P, Pmax (T1 & T2)	programmable	7 modules	CEDT 1001
ULYS ETAR	three-phase 100 to 400 V	CT 1 or 5 A, insulated	single	active and reactive	yes	yes, two	P, Pmax, Q, Qmax	programmable	7 modules	CEAR 1001



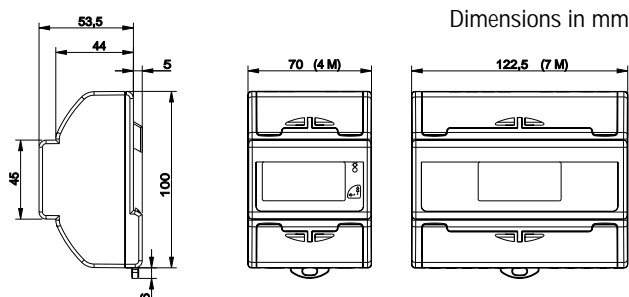
## TECHNICAL SPECIFICATIONS

Nominal input voltage	230 V (-20%, +15%) in single-phase (EMd model) 3 x 100 to 230 V neutral phase, (-20%, +15%) (ETd model) 3 x 57.7 to 230 V neutral phase, (-20%, +15%) other three-phase models
Voltage input consumption	< 1 VA per phase
Nominal input current ( $I_n$ )	15 A (90 A max.) for direct input (modeles EMd and ETd models) 1 ou 5 A for input via current transformer; 6 A max.
Metering threshold	direct input: 60 mA CT input .../5 A : 10 mA CT input .../1 A : 2 mA
Current input consumption	direct input < 0.2 VA CT input .../5 A : < 0.6 VA CT input .../1 A : < 0.03 VA
Network frequency	50 - 60 Hz

Accuracy	active energy (absolute/partial): cl. 1 according to IEC 61036 reactive energy (absolute/partial): cl. 2 in accordance with the IEC 61268 standard active power (instantaneous/maximum): 1% rdg, from 10 to 120% of $I_n$ reactive power (instantaneous/maximum): 2% rdg, from 10 to 120% of $I_n$
Pulse output	100 mA / 230 $V_{AC}$ -325 $V_{DC}$ max.
Constant	depending on configuration, from 0,1 Wh to 100 kWh per pulse (can be defined upstream and downstream of the transformers)
Pulse width precision	configurable from 50 to 500 ms (by increments of 50 ms), 1000 and 1500 ms
Metrological LED frequency	10 Wh for direct current input models (EMd and ETd) 1 Wh for the others
Tariff change inputs	accuracy class 1 (IEC 61036 standard), class 2 (IEC 61268 standard) T1 < 20 $V_{DC}$ (14 $V_{AC}$ ); T2 $\leq$ 230 $V_{AC}$ (325 $V_{DC}$ )

Display	LCD screen, backlighting on three-phase models 8 digits of 11 mm + pictographs display with instrument switched off, reserve of 5,000 displays each lasting 10 s
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Temperature at which used	-20 to +55°C
Casing material	polycarbonate
Protection class	II
Fire/heat resistance	IEC 695-2-1
Protection rating	IP 51
Connection	to screw terminals, 16 mm <sup>2</sup> cross-section for direct inputs, 6 mm <sup>2</sup> cross-section for all the other terminals, protection by means of sealable terminal covers
Weight	500 g maximum
Compliance with standards	IEC/EN 61036, IEC/EN 61268



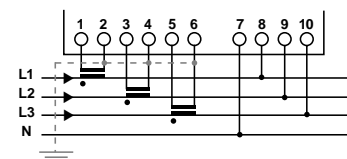
Your distributor:

## CONNECTION

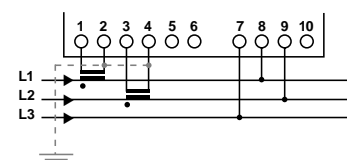


Connecting the secondary of the current transformers to the earth is only possible with those models which have insulated inputs (ETi, ETDT and ETAR).

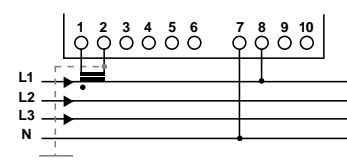
3CT, for 4-wire unbalanced network



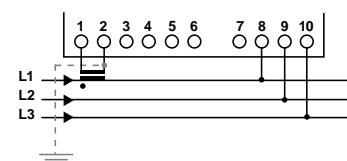
2CT, for 3-wire unbalanced network



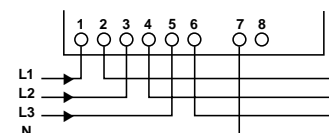
1CT, for 4-wire balanced network



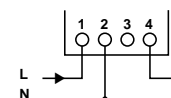
1CT, for 3-wire balanced network



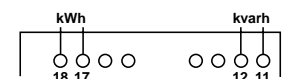
Direct, three-phase network



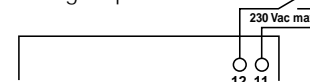
Direct, single-phase network



Pulse transmitter



Tariff change input



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