128, av. du Maréchal-de-Lattre-de-Tassigny - 87045 LIMOGES Cedex
Tel : 0 (+33) 5 55 06 87 87 Fax : 0 (+33) 5 55 06 88 88
www.legrand.com

Standard EcoMeter et current transformer

Cat. No(s) : 4 120 08 - 4 120 30/31

4 120 30

4 120 31

4 120 08

CONTENTS **Page**

1. DESCRIPTION - USE

Legrand EcoMeter allows to measure the total and partial electrical energy consumption up to 3 electrical lines such as : heating, cooling and domestic hot water.

The total consumption information comes from a current transformer previously put on the TOTAL connection port or from the TIC cable (specific for french market). Gas, hot water/cold water can be measured via pulses inputs.

It displays the consumption of each lines in euros, kWh or m^3 via LCD screen.

Thanks to the embedded screen, it is easy to keep an eye on consumption in real time and to follow them on the historic.

For France, this device facilitates the achievement of the primary energy consumption and carbon impact reduction objectives required by RE2020.

2. RANGE

References

4 120 30 : Standard EcoMeter

4 120 31 : Kit Standard EcoMeter composed by :

- 1 EcoMeter module
- 3 Current transformers

4 120 08 : Current transformer (Imax 80A AC)

Dimension :

5 modules for Standard EcoMeter

Nominal current :

Un : 100/240 V~ (fase - Neutral)

Maximal discharge current :

Imax = 80A (via external current transformer)

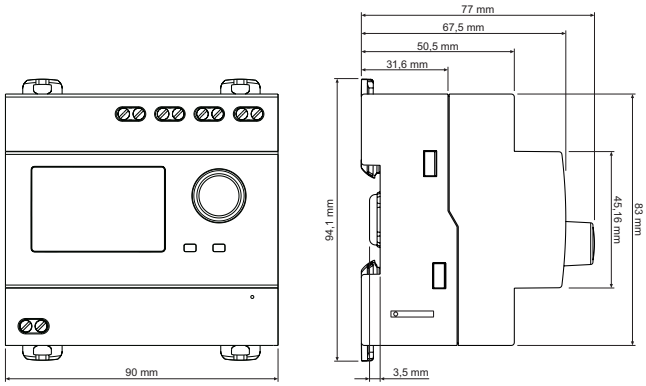
Rated frequency :

50 Hz (admitted variation : 45/55 Hz)

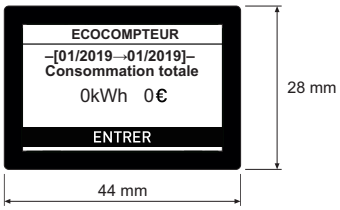
60 Hz (admitted variation : 55/65 Hz)

3. OVERALL DIMENSIONS

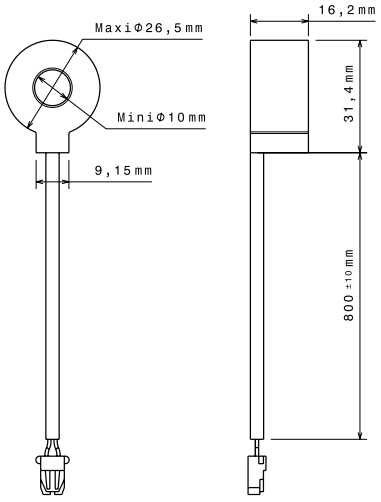
3.1 Standard EcoMeter (5 modules)



3.2 Standard EcoMeter screen



3.3 Current transformer

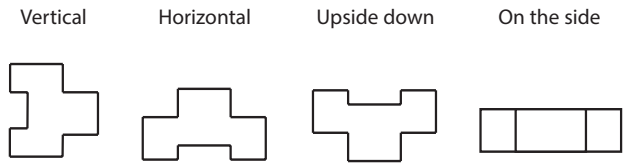


4. PREPARATION - CONNECTION

4.1 Fixing

On symmetric rail EN/IEC 60715 or DIN 35 rail.
Necessary tool : flat screwdriver 5,5 mm (6 mm maxi)

4.2 Operating positions



4.3 Terminals

References 4 120 30/31

- **Pulse terminals**

Terminal depth : 8 mm
Stripping length : 8 mm
Slotted screw head : Ø3,5 mm
Recommended tightening torque : 0,4 / 0,5 Nm
Necessary tool : flat screwdriver 3,5 mm

- **Power supply terminals (1P+N)**

Terminal depth : 8 mm
Stripping length : 8 mm
Slotted screw head : Ø3,5 mm
Recommended tightening torque : 1 Nm
Necessary tool : flat screwdriver 3,5 mm

4.4 Terminal capacity

References 4 120 30/31

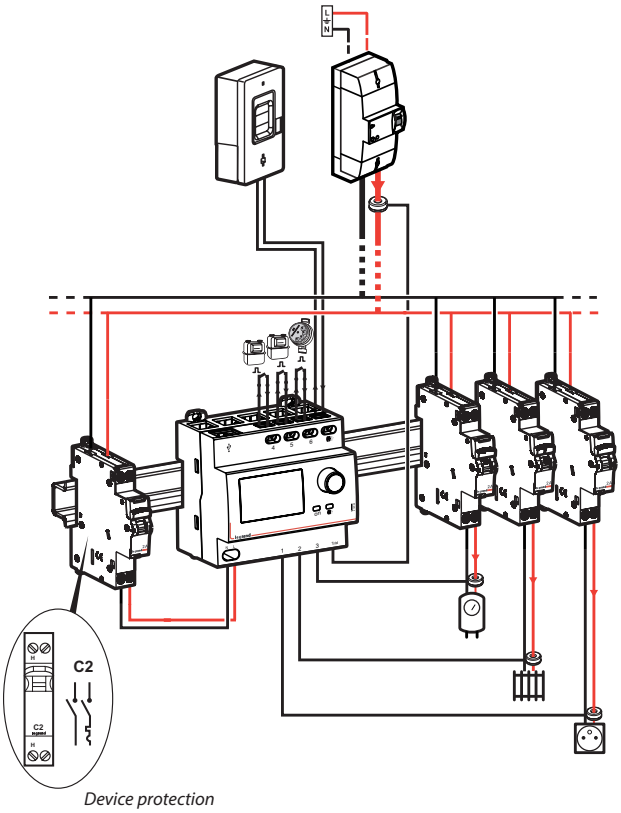
	Terminal	Without ferrule	With ferrule
Rigid cable	Pulse terminal	1 x 2,5 mm² 2 x 1 mm²	
	Power supply	1 x 2,5 mm² 2 x 1,5 mm²	
Flexible cable	Pulse terminal	1 x 2,5 mm² 2 x 1 mm²	1 x 2,5 mm² 2 x 1 mm²
	Power supply	1 x 2,5 mm² 2 x 1,5 mm²	1 x 2,5 mm² 2 x 1,5 mm²

4.5 Current transformer capacity

Reference 4 120 08

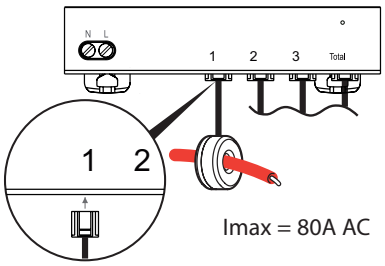
Wire section	1,5 mm²	2,5 mm²	6 mm²	10 à 25 mm²
Wire capacity	10	7	4	1

4.6 Wiring diagrams



Device protection

- Mandatory 100 / 240 V~ between fase et neutral.
- Device must be protected by MCB or Fuse 2A.
- Current transformer connection to EcoMeter module via clip terminals. No tool required.



Mind the current flow. An arrow as been printed ont the current transformer sticker in order to display the current flow.

5. GENERAL CHARACTERISTICS

■ 5.1 Signaling led

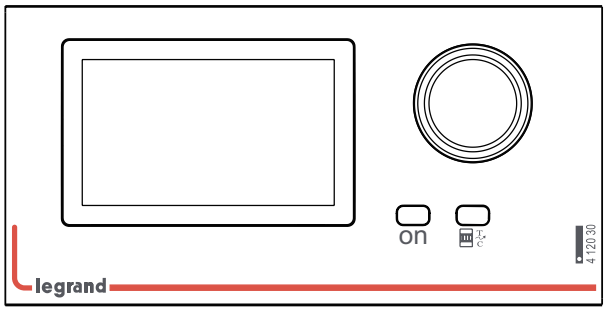
Possible states :

LED	Led colour	State	Description
on		ON	Power on
		OFF	Power off
		ON	«TIC» communication OK*
		OFF	«TIC» disabled
		Blinking	«TIC» enabled but without communication

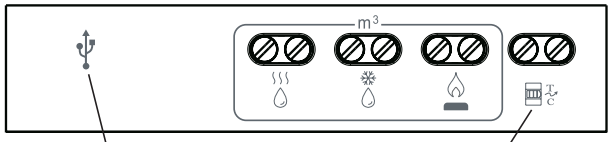
** Specific French energy tariff management possibility*

■ 5.2 Product marking

- Front side marking by permanent ink pad printing



- Upstream terminal block marking by permanent ink pad printing

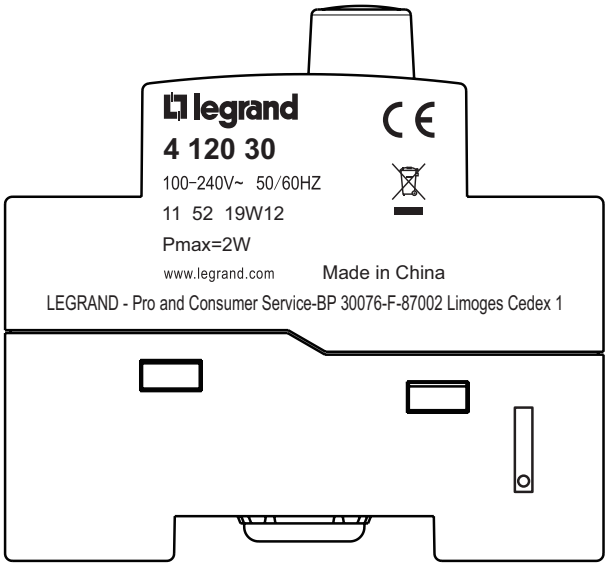


Updates USB

«TIC» communication port (specific french energy tariff management possibility). Refer to the part 6.CONFIGURATIONS for more information

- Downstream terminal block by permanent ink pad printing

- Lateral side marking by laser



■ 5.3 Technical characteristics

Plastic materials :

- Self-extinguishing polycarbonate
- Heat and fire resistance according to IEC/EN 60695-2-12, glow-wire test at 960°C
- Classification UL 94 / IEC/EN 60695-11-10:V1

Operating temperature : -25°C to +55°C

Storage temperature : -25°C to +55°C

Protection index :

- Protection index against direct contacts : IP2X (according to IEC/EN 60529)
- Protection index of terminals against solid and liquid bodies (device wired) : IP20 (according to IEC/EN 60529)
- Protection index under faceplate : IP40 (according to IEC/EN 60529)

Double insulation classe II (under faceplate)

Resistance to sinusoidal vibrations :

- According to IEC 60068-2-6
- Axis : x, y, z
- Frequency range : 5/100 Hz, duration 90 min
- Displacement (5/13,2 Hz) : 1 mm
- Acceleration (13,2/100 Hz) : 0,7 g (g=9,81 m/s^2)

Average weight of Standard EcoMeter : 0,22 kg

Volume when packed :

- Standard EcoMeter : 1,005 dm^3
- Kit Standard EcoMeter : 1,619 dm^3

Stand-by power consumption < 2 W (values at 230 V ~)

6. CONFIGURATION

All configurations should be made thanks to the screen integrated directly on the device. You can check the navigation process ont the part « 7. NAVIGATION SCREENS » of this document.

6.1 Language

- French (by default)
- English

6.2 Currency

- Euro € (by default)
- Pounds £

6.3 Total consumption

The total consumption information can come from a current transformer previously put on the «Total» connection port or from the TIC cable (specific for french market).

- If the « mode TIC » is disabled (by default) : the total consumption comes from a current transformer connected to the input tore «Total» of the EcoMeter.
- if « mode TIC » is activated : the total consumption comes from the TIC link directly (TIC to connect, current transformer «Total» unnecessary).

6.4 Tariff management

The device gives you the possibility to choose the tariff management mode and the time slots associated.

Choice of two « Base » or « Peak Hours/Off-peak Hours » pricing options. For « Peak Hours / Off-peak Hours », manual definition of time slots.

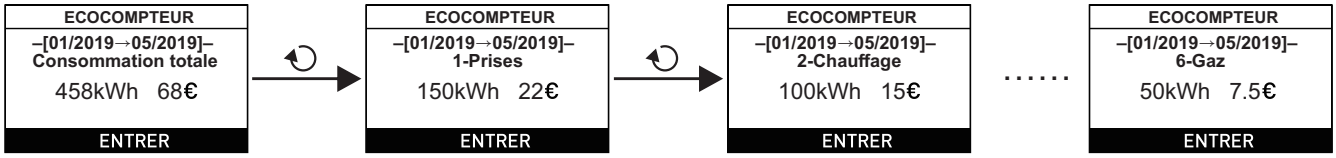
- Inquire the kWh price in «Basic» tariff or in « Peak Hours / Off-peak Hours » tariff.

Remark : when one tariff is fulfilled (price ≠ 0), the values of the other tariff must be set to zero.

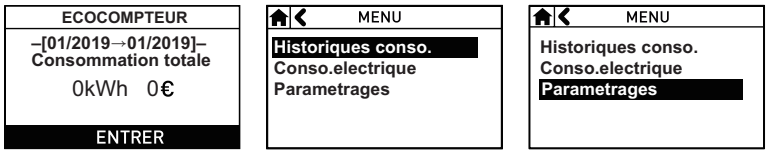
- If the tariff « Peak Hours / Off-peak Hours » is activated : fulfill the information link to the time slots in « Tariff time » section (start hour period ON and end hour period OFF).

7. NAVIGATION SCREENS

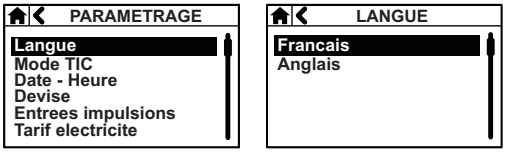
7.1 Electrical lines quick view



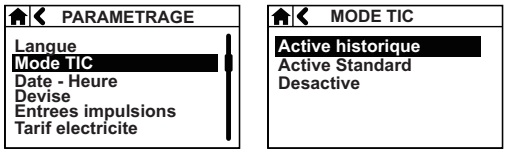
7.2 Settings



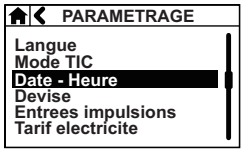
7.3 Choice of language

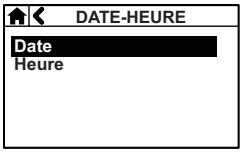


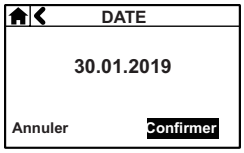
7.4 Choice of TIC mode (Peak Hours/Off-peak Hours)

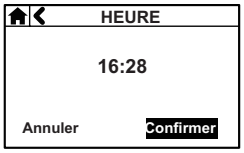


7.5 Date and time

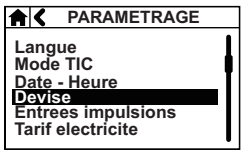


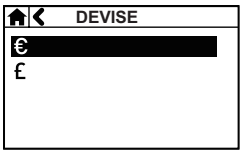




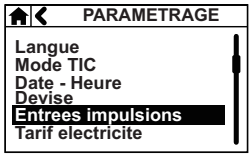


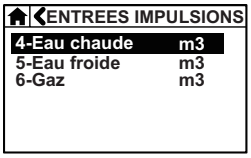
7.6 Currency choice

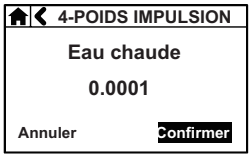


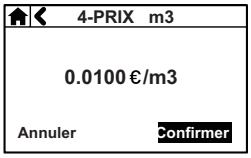


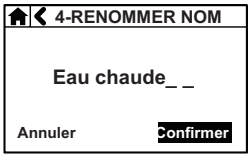
7.7 Pulse inputs settings



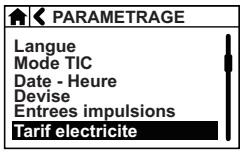


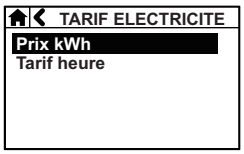


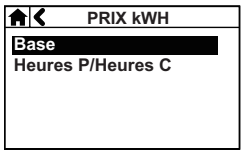


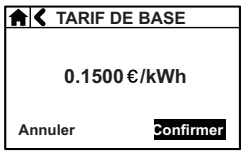


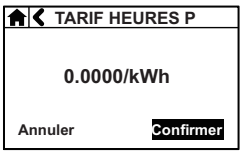
7.8 Electricity tariffs - prices

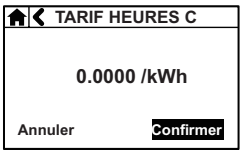




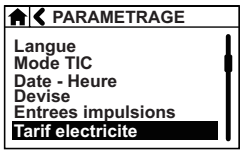


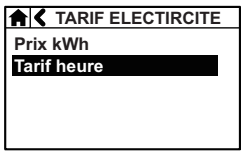


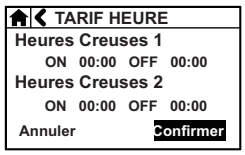




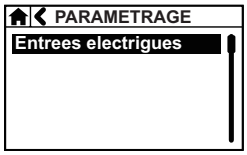
7.9 Electricity tariffs - Time slots

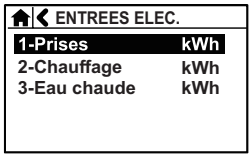


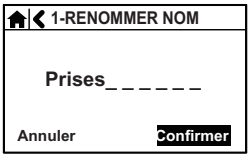




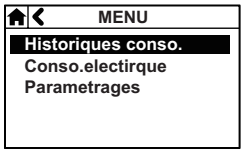
7.10 Electrical input setting (renaming)

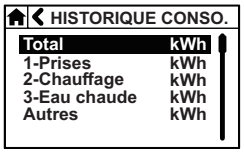


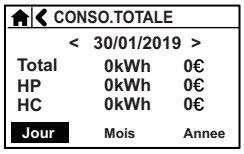


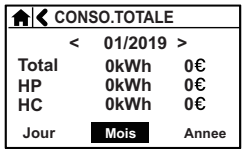


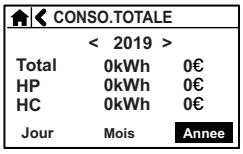
7.11 Consumption display



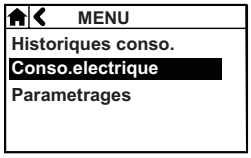


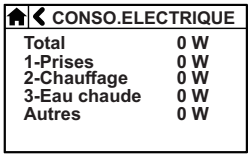






7.12 Power display





7.13 Data retention capacity

Firmware version	Year range	Month range	Range day
< V021	4	6	14
≥ V021	4	12	30

7.14 Pulse input

- Connect with water / gas meter
- Unit : m^3
- Ratio between pulse number and M3 could be adjusted, default value : 1000:1.

8. CONFORMITIES AND APPROVALS

Compliance to standards :
EMC EN 61326 : 2013
Safety EN 61010-1 : 2010

- Compliance with Directive Electromagnetic compatibility (EMC) n° 2014/30/EU
- Compliance with low voltage directive n° 2014/35/EU.
- Electromagnetic compatibility :
  EN 55014-1 :2006 + A1 :2009, Part 1 : CISPR 14-1 :2005 + A1 :2008 ;
  EN 61000-4-2 :2009, Part 4-2 : IEC 61000-4-2 : 2008 ;
  EN 61000-4-3 :2006 + A1 :2008 + A2 :2010, Part 4-3 : IEC 61000-4-3 :2006 + A1 :2007 + A2 :2010 ;
  EN 61000-4-4 :2004 + A1 :2010, Part 4-4 : IEC 61000-4-4 :2004 + A1 :2010 ;
  EN 61000-4-5 :2006, Part 4-5 : IEC 61000-4-5 :2005 ;
  EN 61000-4-6 :2009, Part 4-6 : IEC 61000-4-6 :2008 ;
  EN 61000-4-16 :1998 + A1 :2004 + A2 :2011, Part 4-16 : IEC 61000-4-16 :1998 + A1 :2001 + A2 :2009 ;
  EN 61189-2, Part 2 : IEC 61189-2 ;
  EN 61543 :1995 + corr. Dec. 1997 + A11 :2003 + A12 :2005, IEC 61543 :1995 + A2 :2005 ;
- EN 50557 :2011 ;
- EN 60898-1 :2003 + corr. Feb. 2004 + A1 :2004 + A11 :2005 + A12 :2008, Part 1 : IEC 60898-1 :2002, mod. + A1 :2002, mod ;
- EN 60898-2 :2006, Part 2 : IEC 60898-2 :2000, mod. + A1 :2003, mod ;
- EN 60947-5-1 :2004 + corr. Jul. 2005 + A1 :2009, Part 5-1 : IEC 60947-5-1 :2003 + A1 :2009 ;
- EN 61008-1 :2004 + A11 :2007 + A12 :2009, Part 1 : IEC 61008-1 :1996, mod. + A1 :2002, mod ;
- EN 61009-1 :2004 + A11 :2008 + A12 :2009 + A13 :2009, Part 1 : IEC 61009-1 :1996, mod. + A1 :2002, mod. + corr. May 2003 ;
- EN 61558 ;
- EN 62019 ;

Legrand device can be used under conditions of use as defined by IEC / EN 60947.

The product can be used in the conditions defined by standard IEC/EN 60947.
Respect for the environment – Compliance with EC directives:
- Complies with directive 2011/65/EU known as "RoHS II"
- Complies with Directive 91/338/EC of 18/06/91 and decree 94-647 of 27/07/2004
- Complies with REACH

Plastic materials:
- Halogen-free
- Product marking complies with standards ISO 11469 and ISO 1043
- EN ISO 306: 2004
- ISO 7000: 2004

Packaging:
- Design and industrialisation comply with decree 98-638 of 20/07/98 and Directive 94/62/EC