



EC Type Examination Certificate Number: **0120/ SGS0044**

Janz-Contadores de Energia,SA

Av. Infante D. Henrique 328
1800-223 Lisboa
Portugal

Instrument Identification:
B1801****

Poly Phase, Credit, Active Import/ Export, Multi-rate, Indoor, Electricity Meter

Instrument Traceable Number

0120/ SGS0044

has been assessed and certified as meeting the requirements of

EC Directive 2004/22/EC

on Measuring Instruments Annex B

It is certified that the manufacturer's technical design and specimen for the above instrument has been examined and, based on the evidence submitted, it is considered that the instrument conforms to the requirements of MI-003 of EC Directive 2004/22/EC

This certificate must be used in conjunction with a certificate covering the product verification as required in Annex D or Annex F.

This certificate is valid from 11th March 2010 to 10th March 2020
Issue 7

Certification is based on report number(s)
EMA124573 & EMA140749


Authorised Signature

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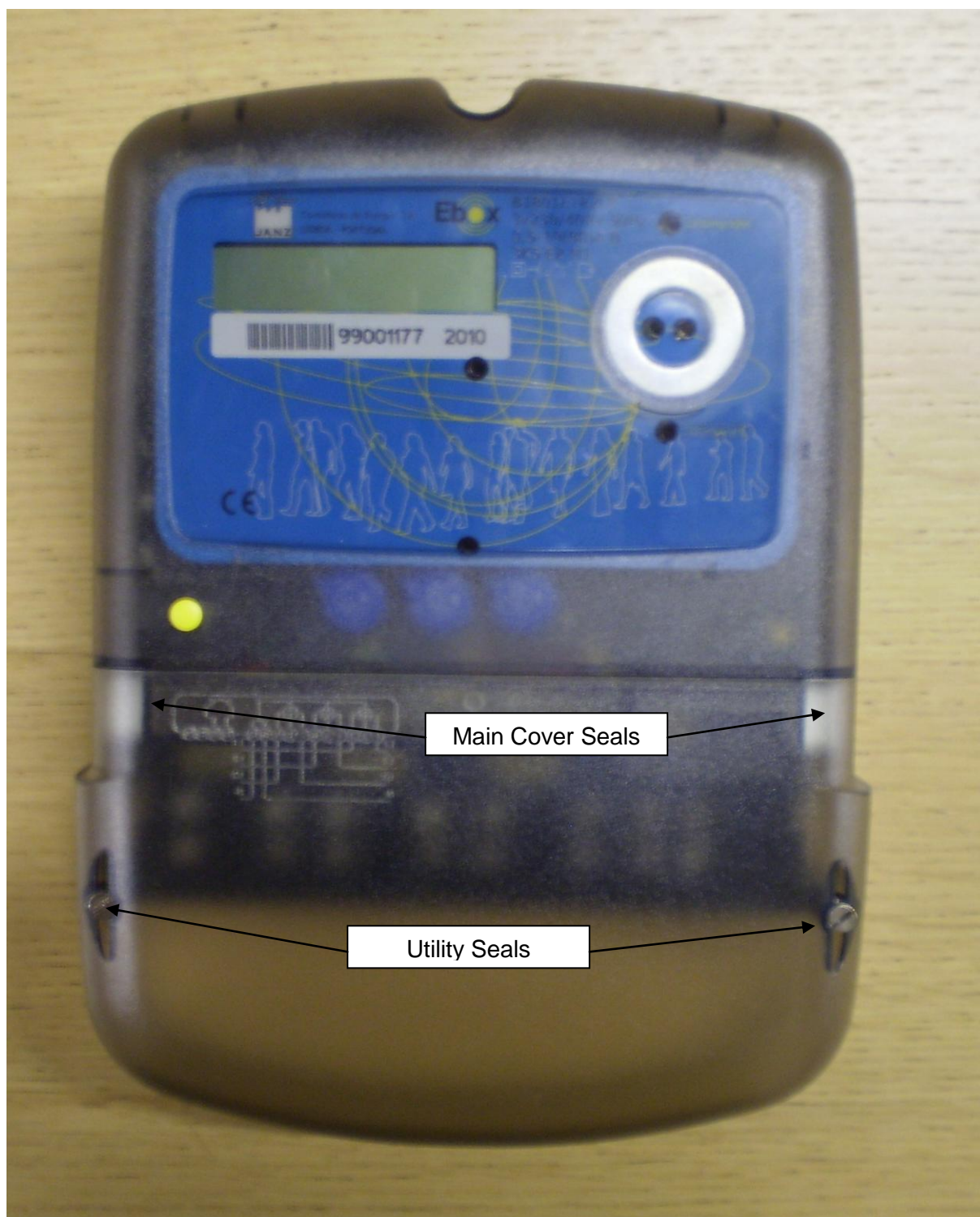
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1. Technical Data

Manufacturer	Janz-Contadores de Energia, SA.
Meter Type	B1801****
Voltage Rating (U_n)	3 x 230/ 400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0,5-10(80)A or 0,5-10(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p4w
Temperature Range	-25°C to +55°C
Software Version No.'s Firmware Version No.'s	1.1.1 or 1.6.1 or 1.6.2 or 1.6.4.IP or 1.6.6.IP.
Identification Location	1.0 or 1.2 or 1.3 LCD
Bill Of Materials Number	PCB BOM No: 917809501f5c 917809501f5e Mechanical BOM No's: 917809501f2b 917809501f3b 917809501f9
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	2 x Wire & Crimp or 2 x Tamper Proof sealing tape concealing main cover screw
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS & DIN

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2. Photograph of Meter and Sealing Plan



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3. Calculation of the composite error/ MPE

In addition to the accuracy requirements the composite error e_c of the meter is shown below

The composite error at a certain load is calculated from the following formula:

$$e_c = \sqrt{e^2(l.\cos\theta) + e^2(T.l.\cos\theta) + e^2(U.l.\cos\theta) + e^2(f.l.\cos\theta)}$$

where

$e^2(l.\cos\theta)$	=	Intrinsic error of meter at a certain load
$e^2(T.l.\cos\theta)$	=	Additional error due to variation of the temperature at the same load
$e^2(U.l.\cos\theta)$	=	Additional error due to variation of the voltage at the same load
$e^2(f.l.\cos\theta)$	=	Additional error due to variation of the frequency at the same load

Ambient Temperature Range 5 to 30 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
Imin	1.0	0.00	0.14	-0.08	-0.05	0.17
Itr	1.0	0.04	0.16	-0.06	-0.04	0.18
10ltr	1.0	0.06	0.18	-0.04	-0.02	0.19
Imax	1.0	0.07	0.18	-0.03	-0.02	0.20
Itr	0.5ind	0.11	0.18	-0.03	-0.01	0.21
10ltr	0.5ind	0.08	0.20	-0.02	0.01	0.22
Imax	0.5ind	-0.06	0.20	0.04	0.03	0.21
Itr	0.8cap	0.04	0.17	-0.04	-0.01	0.18
10ltr	0.8cap	0.08	0.17	-0.04	-0.01	0.19
Imax	0.8cap	0.14	0.15	-0.05	-0.03	0.21

Ambient Temperature Range -10 to 40 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
Imin	1.0	0.00	-0.20	-0.08	-0.05	0.21
Itr	1.0	0.04	-0.20	-0.06	-0.04	0.22
10ltr	1.0	0.06	-0.18	-0.04	-0.02	0.19
Imax	1.0	0.07	0.20	-0.03	-0.02	0.21
Itr	0.5ind	0.11	0.21	-0.03	-0.01	0.24
10ltr	0.5ind	0.08	0.21	-0.02	0.01	0.23
Imax	0.5ind	-0.06	0.26	0.04	0.03	0.27
Itr	0.8cap	0.04	0.18	-0.04	-0.01	0.19
10ltr	0.8cap	0.08	0.19	-0.04	-0.01	0.21
Imax	0.8cap	0.14	0.20	-0.05	-0.03	0.25




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Ambient Temperature Range -25 to 55 Degrees C						
Current	PF Cos	e(lcos)	e(Tlcos)	e(Ulcos)	e(flcos)	%MPE
Imin	1.0	0.00	0.20	-0.08	-0.05	0.22
Itr	1.0	0.04	0.23	-0.06	-0.04	0.24
10ltr	1.0	0.06	0.25	-0.04	-0.02	0.26
I _{max}	1.0	0.07	0.27	-0.03	-0.02	0.28
Itr	0.5ind	0.11	0.29	-0.03	-0.01	0.31
10ltr	0.5ind	0.08	0.29	-0.02	0.01	0.30
I _{max}	0.5ind	-0.06	0.28	0.04	0.03	0.29
Itr	0.8cap	0.04	0.27	-0.04	-0.01	0.28
10ltr	0.8cap	0.08	0.27	-0.04	-0.01	0.28
I _{max}	0.8cap	0.14	0.28	-0.05	-0.03	0.32

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4. Annex of Variants

Product Variant Identification Details:

Type Designation		Description of meter
CONNECTION MODE	B	Poly phase meter for direct connection (4 wires)
SERIES	1	The concept of series is related with the physical aspect of meter (meter case), seven series remain available
TARIFF	80	Programmable Multirate, kWh/kvarh import export (demand registration and load profile)
INTERFACE TO THE USER	-	Without push buttons (LCD scrolls the programmed data)
	1	One push button to access data on LCD
PULSE OUTPUT	-	No pulse output
	E1	One pulse output (through terminals 21/22)
	E2	Two pulse outputs (through terminals 21/24 & 22/24)
PULSE INPUT	-	No pulse input for tariff switch
	I1	One pulse input for tariff switch
	I2	Two pulse inputs for tariff switch (excludes E2)
AUXILIARY COMMUNICATIONS	-	No auxiliary communications
	R2	With RS232 port / multidrop / HAN ports
	R4	With RS485 port
AUXILIARY DEVICES	-	No auxiliary devices
	LR	Latching relay
ANTI-TAMPER	-	Without external cover opening detection device
	F	With external cover opening detection device

Modifications to the meter(s) described according to approval No. **0120/ SGS0044** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

5. Document Revision History

Issue	Date	Comments
1	11/03/2010	Initial Issue
2	13/12/2010	Minor Software & Firmware Update to 1.6.1 and 1.2. New BOM
3	31/03/2011	Minor Software & Firmware Update to 1.6.2 and 1.3. Corrected BOM list
4	12/04/2011	Migrated to new certificate template
5	19/04/2012	Minor Software Update to 1.6.4.IP. New BOM. Migrated to new cert. template
6	09/05/2012	Corrected Terminal Arrangement to BS & DIN
7	04/06/2013	Minor Software Update to 1.6.6.IP