EC Type Examination Certificate Number: **0120/ SGS0017**

Janz-Contadores de Energia,SA

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

Instrument Identification:
B1##
Poly phase, Credit, Active Import, Single & Multi-rate, Electricity Meter
Instrument Traceable Number
0120/ SGS0017
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 for 10 years from 13th March 2008 until 12th March 2018
Issue 8

Certification is based on report number(s)
EMA101440 dated 2nd August 2007
EMA105697 dated 11th December 2007
EMA115289 dated 13th March 2008
EMA122303 dated 14th November 2008
EMA115289 FW Update dated 23rd July 2009

Authorised Signature

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	EC-Type Examination Certificate Number:	
	0120/ SGS0017	
	Issue Number: 8	Dated: 3rd April 2013

1. Technical Data

Manufacturer	Janz-Contadores de Energia,SA
Meter Type	B1##
Voltage Rating *(Un)*	3 x 220-240/380-415V
Current Rating *(Imin – Iref (Imax))*	0,5-10(60)A, 0,25-5(80)A, 0,25-5(100)A
Frequency *(Fn)*	50Hz
Active Accuracy Class *(kWh)*	A or B (kWh)
Type of circuit	3p4w
Temperature Range	-25°C to +60°C
Software/ Firmware Version No's **Identification Location**	v00.01, v02.20, v02.21 v03.01 anti tamper version v03.12 anti fraud version v04.01.0; v04.02.0 LCD & Nameplate
Bill Of Materials Number	See over leaf
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	Wire & Crimp Or Un-peelable sealing tape concealing cover screw
Integrity of meter	Inaccessible without breaking seals under terminal cover
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS or DIN

Bill Of Materials Numbers

Basic Layout Drawing:	9 1740 9001 f1a
PCB BOM No:	9 1700 9001 f5e
Mechanical BOM No:	9 1700 9001 f4h
Assembly Drawing No:	9 1700 9001 f2g

2. Photograph of Meter and Sealing Plan

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

where

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

Ambient Temperature Range 5 to 30 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	0.15	0.17	-0.08	-0.02	***0.24***
Itr	1.0	0.11	0.16	-0.08	-0.01	***0.21***
10Itr	1.0	0.08	0.19	0.06	0.02	***0.22***
Imax	1.0	0.08	0.19	0.06	0.02	***0.22***
Itr	0.5ind	0.12	0.19	-0.09	0.02	***0.24***
10Itr	0.5ind	0.06	0.21	0.06	0.01	***0.23***
Imax	0.5ind	-0.10	0.19	0.05	0.01	***0.22***
Itr	0.8cap	0.15	0.16	0.08	0.02	***0.23***
10Itr	0.8cap	0.09	0.18	0.06	0.01	***0.21***
Imax	0.8cap	0.17	0.19	0.06	0.02	***0.26***

Ambient Temperature Range -10 to 40 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	0.15	0.31	-0.08	-0.02	***0.35***
Itr	1.0	0.11	0.31	-0.08	-0.01	***0.34***
10Itr	1.0	0.08	0.34	0.06	0.02	***0.35***
Imax	1.0	0.08	0.33	0.06	0.02	***0.35***
Itr	0.5ind	0.12	0.40	-0.09	0.02	***0.43***
10Itr	0.5ind	0.06	0.35	0.06	0.01	***0.36***
Imax	0.5ind	-0.10	0.33	0.05	0.01	***0.35***
Itr	0.8cap	0.15	0.31	0.08	0.02	***0.35***
10Itr	0.8cap	0.09	0.31	0.06	0.01	***0.33***
Imax	0.8cap	0.17	0.31	0.06	0.02	***0.36***

Ambient Temperature Range -25 to 55 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	0.15	0.34	-0.08	-0.02	***0.38***
Itr	1.0	0.11	0.36	-0.08	-0.01	***0.38***
10Itr	1.0	0.08	0.37	0.06	0.02	***0.38***
Imax	1.0	0.08	0.37	0.06	0.02	***0.38***
Itr	0.5ind	0.12	0.35	-0.09	0.02	***0.38***
10Itr	0.5ind	0.06	0.36	0.06	0.01	***0.37***
Imax	0.5ind	-0.10	-0.36	0.05	0.01	***0.38***
Itr	0.8cap	0.15	-0.37	0.08	0.02	***0.41***
10Itr	0.8cap	0.09	-0.36	0.06	0.01	***0.38***
Imax	0.8cap	0.17	-0.36	0.06	0.02	***0.40***

Results taken from test report EMA115289 issued 23rd July 2009

4. Annex of Variants

Product Variant Identification Details:

Type Designation		Description of meter
CONNECTION MODE	**B**	**Polyphase meter for direct connection (3 or 4 wire)**
SERIES	**1**	**The concept of series is related with the physical aspect of meter (meter case), eight series remain available**
TARIFF	**11**	**Single rate (LCD), kWh**
	40	**Programmable Multirate, kWh (no demand registers, no load profile)**
INTERFACE TO THE USER	**-**	**Without push buttons (LCD scrolls the programmed data)**
PULSE OUTPUT	**-**	**No pulse output**
	E1	**One pulse output (through terminals 21/22)**
	E2	**Two pulse outputs (through terminals 21/22 & 22/24)**
PULSE INTPUT	**-**	**No pulse input for tariff switch**
AUXILIARY COMMUNICATIONS	**-**	**No auxiliary communications**
	R2	**With RS232 port**
	R4	**With RS485 port**
ANTI-TAMPER	**-**	**Without external cover opening detection device**
VERSION	-	**The initial version is not identified**

Modifications to the meter(s) described according to approval No.**0120/ SGS0017** 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	13/03/2008	Initial Issue
2	13/03/2008	Amended approval number with prefix UK/0120
3	13/03/2008	Corrected test report file reference
4	14/11/2008	New firmware update to v3.12 anti fraud version
5	23/07/2009	New firmware update to v3.01 anti tamper version
6	20/06/2012	New firmware update to v04.01.00
7	15/03/2013	BOM & Minor Firmware Update to Version v04.02.0
8	03/04/2013	Certificate corrected