EC Type Examination Certificate Number: **0120/ SGS0010**

Elster Metering Systems

Tollgate Business Park
Beaconside
Stafford
ST16 3HS

Instrument Identification:

A1100, Electricity Meter, LB*******
Poly Phase, Credit, Active Import/ Export, Multi-rate, Direct Connected/ Transformer Operated, Electricity Meter with LCD or Electromechanical Display**

Instrument Traceable Number

0120/ SGS0010

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 10 years from 17th September 2007 until 17th September 2017
Issue 5

Certification is based on report number(s)
EMA110672/ 1/ CT dated 17th September 2007
EMA110672/ 1/ WC dated 17th September 2007

Authorised Signature

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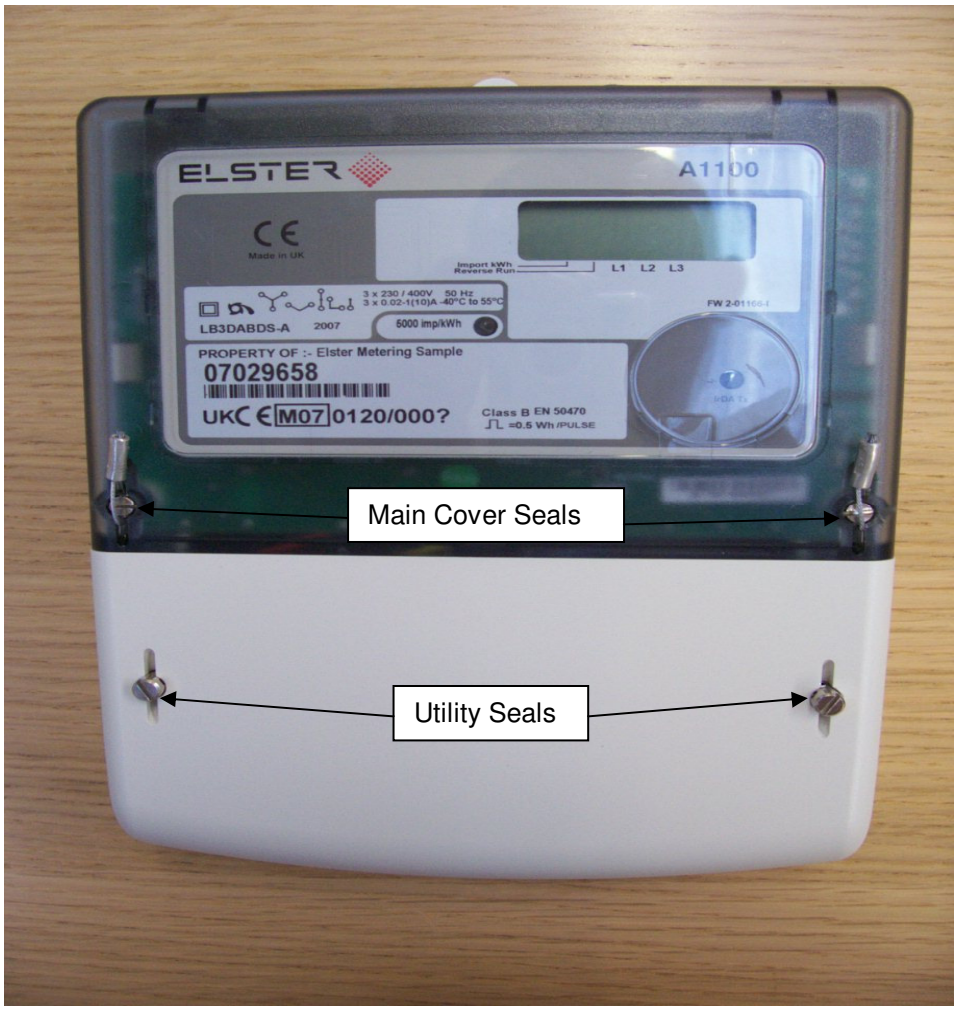
	EC-Type Examination Certificate Number:	
	0120/ SGS0010	
	Issue Number: 5	Dated: 23rd May 2012

1. Technical Data

Manufacturer	Elster Metering Systems
Meter Type	A1100
Voltage Rating *(Un)*	**Direct Connection** 220-240V (L-N), 380-415V (L-L) **Transformer Operated** 220-240V (L-N), 380-415V (L-L)
Current Rating *(Imin – Iref (Imax))*	**Direct Connection** 0,25-5(100)A or 0,25-5(85)A (Any value Iref ≥ 5, up to Imax) **Transformer Operated** 0,01-1(10)A or 0,01-1(6)A (Any value of In ≥ 1, up to Imax)
Frequency *(Fn)*	50Hz
Active Accuracy Class *(kWh)*	A or B (kWh)
Type of circuit	1p2w, 1p3w, 2p of 3p4w, 2p3w, 3p3w, 3p4w.
Temperature Range	-40°C to +70°C
Software/ Firmware Version No **Identification Location**	2-01166-E2A or 2-01166-I or 2-01166-K Nameplate
Bill Of Materials Number	JG0517 with LCD Register JG0518 with Mech Register
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	500 or 5000 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Sealed for life
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS or DIN

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	-0.12	0.46	-0.10	-0.06	***0.49***
Itr	1.0	-0.15	0.42	-0.03	-0.05	***0.45***
10Itr	1.0	0.29	0.28	0.14	0.07	***0.43***
Imax	1.0	0.07	0.40	-0.14	0.01	***0.43***
Itr	0.5ind	-0.35	-1.24	0.03	0.17	***1.30***
10Itr	0.5ind	0.1	-0.76	0.25	0.45	***0.92***
Imax	0.5ind	-0.26	-0.49	0.04	-0.10	***0.57***
Itr	0.8cap	-0.12	0.79	-0.17	-0.12	***0.83***
10Itr	0.8cap	0.32	0.93	0.04	-0.11	***0.99***
Imax	0.8cap	0.18	0.68	-0.07	-0.06	***0.71***

Ambient Temperature Range -10 to 40 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.12	0.64	-0.10	-0.06	***0.66***
Itr	1.0	-0.15	0.53	-0.03	-0.05	***0.55***
10Itr	1.0	0.29	0.61	0.14	0.07	***0.69***
Imax	1.0	0.07	0.42	-0.14	0.01	***0.45***
Itr	0.5ind	-0.35	-2.19	0.03	0.17	***2.22***
10Itr	0.5ind	0.1	-1.98	0.25	0.45	***2.05***
Imax	0.5ind	-0.26	-1.00	0.04	-0.10	***1.04***
Itr	0.8cap	-0.12	1.44	-0.17	-0.12	***1.46***
10Itr	0.8cap	0.32	1.21	0.04	-0.11	***1.26***
Imax	0.8cap	0.18	1.01	-0.07	-0.06	***1.03***

Ambient Temperature Range -25 to 55 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.12	1.01	-0.10	-0.06	***1.02***
Itr	1.0	-0.15	0.81	-0.03	-0.05	***0.83***
10Itr	1.0	0.29	0.77	0.14	0.07	***0.84***
Imax	1.0	0.07	0.71	-0.14	0.01	***0.73***
Itr	0.5ind	-0.35	-3.10	0.03	0.17	***3.12***
10Itr	0.5ind	0.1	-2.91	0.25	0.45	***2.96***
Imax	0.5ind	-0.26	-1.48	0.04	-0.10	***1.51***
Itr	0.8cap	-0.12	0.21	-0.17	-0.12	***0.32***
10Itr	0.8cap	0.32	2.15	0.04	-0.11	***2.18***
Imax	0.8cap	0.18	-0.39	-0.07	-0.06	***0.44***

Ambient Temperature Range -40 to 70 Degrees C (OUTDOOR ONLY)						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.12	1.45	-0.10	-0.06	***1.46***
Itr	1.0	-0.15	-0.55	-0.03	-0.05	***0.57***
10Itr	1.0	0.29	0.78	0.14	0.07	***0.85***
Imax	1.0	0.07	0.91	-0.14	0.01	***0.92***
Itr	0.5ind	-0.35	-3.84	0.03	0.17	***3.86***
10Itr	0.5ind	0.1	-3.14	0.25	0.45	***3.18***
Imax	0.5ind	-0.26	-1.74	0.04	-0.10	***1.76***
Itr	0.8cap	-0.12	2.87	-0.17	-0.12	***2.88***
10Itr	0.8cap	0.32	2.62	0.04	-0.11	***2.64***
Imax	0.8cap	0.18	1.99	-0.07	-0.06	***2.00***

Results taken from CT variant Report 110672/1/CT dated 17th September 2007

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	-0.18	0.34	0.18	0.15	***0.45***
Itr	1.0	-0.20	0.39	0.06	0.09	***0.45***
10Itr	1.0	-0.34	0.31	0.07	-0.01	***0.47***
Imax	1.0	-0.02	0.09	0.04	0.08	***0.13***
Itr	0.5ind	-0.15	-0.82	0.20	0.24	***0.89***
10Itr	0.5ind	-0.50	-0.84	-0.17	0.06	***0.99***
Imax	0.5ind	-0.08	-0.34	-0.07	0.10	***0.37***
Itr	0.8cap	-0.15	0.67	0.08	0.17	***0.71***
10Itr	0.8cap	-0.29	0.47	-0.09	-0.15	***0.58***
Imax	0.8cap	0.03	0.30	0.08	0.08	***0.32***

Ambient Temperature Range -10 to 40 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.18	0.69	0.18	0.15	***0.75***
Itr	1.0	-0.20	0.56	0.06	0.09	***0.60***
10Itr	1.0	-0.34	0.64	0.07	-0.01	***0.73***
Imax	1.0	-0.02	0.41	0.04	0.08	***0.42***
Itr	0.5ind	-0.15	-1.80	0.20	0.24	***1.83***
10Itr	0.5ind	-0.50	-1.68	-0.17	0.06	***1.76***
Imax	0.5ind	-0.08	-0.83	-0.07	0.10	***0.84***
Itr	0.8cap	-0.15	1.40	0.08	0.17	***1.42***
10Itr	0.8cap	-0.29	1.37	-0.09	-0.15	***1.41***
Imax	0.8cap	0.03	0.64	0.08	0.08	***0.65***

Ambient Temperature Range -25 to 55 Degrees C						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.18	0.81	0.18	0.15	***0.86***
Itr	1.0	-0.20	0.77	0.06	0.09	***0.80***
10Itr	1.0	-0.34	0.78	0.07	-0.01	***0.85***
Imax	1.0	-0.02	0.49	0.04	0.08	***0.50***
Itr	0.5ind	-0.15	-2.91	0.20	0.24	***2.93***
10Itr	0.5ind	-0.50	-2.57	-0.17	0.06	***2.62***
Imax	0.5ind	-0.08	-1.36	-0.07	0.10	***1.37***
Itr	0.8cap	-0.15	2.00	0.08	0.17	***2.01***
10Itr	0.8cap	-0.29	1.98	-0.09	-0.15	***2.01***
Imax	0.8cap	0.03	1.14	0.08	0.08	***1.15***

Ambient Temperature Range -40 to 70 Degrees C (OUTDOOR ONLY)						
Current	**PF Cos**	**e(Icos)**	**e(TIcos)**	**e(UIcos)**	**e(fIcos)**	**%MPE**
Imin	1.0	-0.18	0.72	0.18	0.15	***0.78***
Itr	1.0	-0.20	0.76	0.06	0.09	***0.79***
10Itr	1.0	-0.34	0.95	0.07	-0.01	***1.01***
Imax	1.0	-0.02	0.55	0.04	0.08	***0.56***
Itr	0.5ind	-0.15	-3.31	0.20	0.24	***3.33***
10Itr	0.5ind	-0.50	-2.99	-0.17	0.06	***3.04***
Imax	0.5ind	-0.08	-1.44	-0.07	0.10	***1.45***
Itr	0.8cap	-0.15	2.55	0.08	0.17	***2.56***
10Itr	0.8cap	-0.29	2.40	-0.09	-0.15	***2.42***
Imax	0.8cap	0.03	1.49	0.08	0.08	***1.49***

Results taken from WC variant Report 110672/1/WC dated 17th September 2007

4. Annex of Variants

Product Variant Identification Details:

Type Designation **Description of meter**

POLY- PHASE (A1100) MODEL CODE

V_{ref}	I_b	I_{max}

MODEL

TYPE (nameplate)

example:	L	B	3	A	A	B	B	B	S	N	N	S	-	A	N
PRODUCT/TERMINATION															
Poly- Phase, BS/DIN termination	L	B													
SERVICE TYPE															
3Ph 4W (Plus 1 ph 2w for LCD version)			3												
3ph 3w			2												
CURRENT RANGE															
Direct Connected 5-100A				A											
Direct Connected 5 – 85A				B											
CT Operated 1-6A				C											
CT Operated 1-10A				D											
VOLTAGE															
220 – 240V (L--N) (LB3****** variants)					A										
220 – 240V (L--L) (LB2****** variants)					B										
ACCURACY CLASS															
50 Hz Class B kWh(EN 50470-3), Class 2 kvarh (IEC62053-23)						B									
50 Hz Class A kWh(EN 50470-3), Class 2 kvarh (IEC62053-23)						C									
TARIFF CONFIGURATION Source of import register configured at time of manufacture															
Mechanical & LCD															
Single Rate kWh import only							B								
LCD Only															
Single Rate kWh Import register and Export register							D								
Single Rate kWh Import register and Export register with backlit display							F								
Two Rate kWh Import only switched to any live (3ph 4w)							R								
Two Rate kWh Import register and export register switched to any live (3ph 4w)							T								
Two Rate kWh Import only floating 2 auxiliary terminals *(For Ref: switched to any live)*							V								
Two Rate kWh Import register and Export register floating 2 auxiliary terminals							X								
Two Rate kWh Import only switched to neutral – internally connected to A phase (3ph 4w)							Y								
Two Rate kWh Import reg and export reg switched to neutral – internal connected to 'A' phase (3p4w)							Z								
DISPLAY CONFIGURATION															
Mechanical															
Mechanical Register 7 digit Least Significant Digit 1/10 kWh direct connected and CT operated meters								B							
Mechanical Register 6 digit Least Significant Digit 1/10 kWh direct connected and CT operated meters								C							
Mechanical Register 7 digit Least Significant Digit 1/100 kWh CT operated meters only								D							
Mechanical Register 6 digit Least Significant Digit 1/100 kWh CT operated meters only								E							
Mechanical Register 7 digit Least Significant Digit 1/10 kWh (Coded Decimal First Drum)								F							
Mechanical Register 6 digit Least Significant Digit 1/10 kWh (Coded Decimal First Drum)								G							
Mechanical Register 6 digit Least Significant Digit 1 kWh direct connected meters only								H							
LCD Only															
Customer specific display configuration loaded at time of manufacture								S							
DISPLAY CYCLE (LCD Only)															
Customer specific display sequence loaded at time of manufacture									S						
AUXILIARY OUTPUT															
No Output										N					
SO (Pulsing) tied to neutral 1 auxiliary terminal (Not 2 rate floating) 3 Phase 4 Wire only										P					
SO (Pulsing) floating 2 auxiliary terminals (1-Rate only)										Q					
IrDA tied to neutral 1 auxiliary terminal (Not 2 rate floating) 3 Phase 4 Wire only										S					
IrDA floating 2 auxiliary terminals (1 Rate only)										T					

POLY- PHASE (A1100) MODEL CODE																
V_{ref}	I_b	I_{max}	**MODEL**													
			TYPE (nameplate)													
			example:	**L**	**B**	**3**	**A**	**A**	**B**	**B**	B	**S**	**N**	**N**	**S**	-	A	**N**
COMMUNICATIONS																
IrDA optical serial port, data rate set at time of manufacture to 2400, 4800 or 9600												**S**				
OTHER OPTIONS																
Standard (Extended) Terminal cover												**B**				
Standard (Extended) Terminal cover with cut-out												**C**				
Standard (Extended) Terminal cover plus 9.0mm main terminal bores (standard terminal block, over-bored terminals)												**D**				
Standard (Extended) Terminal cover with cut-out and main cover with voltage disconnect protection												**E**				
Standard (Extended) Terminal cover and main cover with voltage disconnect protection												**F**				
Standard (Extended) Clear Terminal cover with cut-out and main cover with voltage disconnect protection												**G**				
Short Terminal cover												**H**				
Standard (Extended) Clear Terminal cover with cut-out												**J**				
Standard (Extended) Terminal Cover plus Main Cover suitable for DIN style Data Loggers												**K**				
Standard (Extended) Terminal Cover with cut-out plus Main Cover suitable for DIN style Data Loggers												**L**				
Standard (Extended) Terminal cover plus 9.5mm main terminal bores (new terminal block)												**M**				
Short Clear Terminal cover and main cover with voltage disconnect protection												**N**				
Short Terminal cover and main cover with voltage disconnect protection												**P**				
VERSION																
Original														-	**A**	
Firmware 2-01166_E2A	for use with Power Flow Indication only (LCD only)													-	**B**	
Firmware 2-01166_I	Hardware upgrade for 15 year certification life (UK) 1 and 2 rate LCD only													-	**C**	
Firmware 2-01166 _K	Theft Resistant Measurement													-	**D**	
SPECIAL ADDITIONS																
None required																**N**
Additional voltage terminals																**A**
Slotted head terminal screws																**B**

Modifications to the meter(s) described according to approval No.**0120/ SGS0010** 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	17/09/2007	Initial Issue
2	17/09/2007	Corrected certificate
3	02/04/2009	Additional firmware version 2-01166K added
4	17/05/2012	New Terminal option. Migrated to new MID certificate template
5	23/05/2012	Corrected Annex Options