

EC Type Examination Certificate Number: 0120/SGS0223

### Elster Solutions (Pty) Limited-part of Honeywell

Unit 6 Rodium Industrial Park Fabriek Road Strijdom Park Johannesburg South Africa

> Instrument Traceable Number 0120/SGS0223

has been assessed and certified as meeting the requirements of

### EC Directive 2004/22/EC

#### 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 until 17<sup>th</sup> August 2017 Issue 1

Certification is based on report number(s) EMA106670/ 1/ CT dated 13<sup>th</sup> August 2007 EMA106670/ 1/ WC dated 13<sup>th</sup> August 2007 EMA130853 dated 26<sup>th</sup> November 2009 EMA137547 dated 18<sup>th</sup> August 2010 EMA180052/1 dated 19<sup>th</sup> September 2013 EMA180052/1/IEC dated 4<sup>th</sup> April 2014 EMA180052/2 dated 18<sup>th</sup> August 2014 EMA180052/2 dated 6<sup>th</sup> February 2015 EMA205841/1 dated 8<sup>th</sup> July 2015

Authorised Signature

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## 0120/ SGS0223

Issue Number: 1

Dated: 22<sup>nd</sup> February 2016

#### Manufacturer Elster Metering Systems Meter Type(s) A1120, A1140, A1160 Voltage Rating (Un) A1120 & A1140 Direct Connection 220-240V (L-N), 380-415V (L-L) 127-139V (L-N), 220-240V (L-L) 105-127V (L-N), 180-220V (L-L) 105-127V (L-L) (LM2\*\*\*\*\*\* only) A1160 Direct Connection 220-240V (L-N), 380-415V (L-L) A1120 & A1140 Transformer Operated 220-240V (L-N), 380-415V (L-L) 127-139V (L-N), 220-240V (L-L) 105-127V (L-N), 180-220V (L-L) 105-127V (L-L) (LM2\*\*\*\*\*\* only) Current Rating (Imin – Iref (Imax)) A1120 & A1140 Direct Connection 0.25-5(100)A (Any multiple of Iref up to Imax) A1160 Direct Connection 1-20(160)A (Any multiple of Iref up to Imax) A1120 & A1140 Transformer Operated 0.01-1(10)A (Any combination of In at 1, 1.5, 2, 2.5, 5 with Imax of meter at 1.2ln, 1.5ln and 2ln) Frequency (Fn) 50Hz Active Accuracy Class (kWh) A or B (kWh) Type of circuit A1120, A1140 1p2w, 1p3w, 1p4w, 2p of 3p4w, 2p3w, 3p3w, 3p4w. A1160 3p4w **Temperature Range** A1120, A1140: -25°C to +55°C A1160: -40°C to +70°C Software Version No's 2-01178J, 2-01178L, 2-01178M, 2-01178N, 2-01178P,2-01178Q 2-01322E, 2-01322G, 2-01322H, 2-01322J, 2-01322K, 2-01322-L 2-01340-A, 2-01340-D, 2-01397-E, 2-01397-F, 2-01397-G. 2-01340-H 2-01398A Nameplate **Identification Location** Bill Of Materials No.'s JG05241, JG05241A, JG05242, JG05243, JG05244, JG05246, JG05247, JG05248, JG052412, JG052413, JG052414, JG052422, JG052423, JG052424, JG052432, JG052433, JG052434, JG0524100

#### 1. Technical Data



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### Technical Data (cont)

IP Rating	IP54
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	A1120 & A1140 - 2 x wire and crimp A1160 - 2 x wire and crimp or optional 2 x shear head screws
Terminal Cover Sealing Type	2 x wire and crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	A1120, A1140: Indoor A1160: Indoor or Outdoor
Type of Register	LCD
Terminal Arrangement(s)	DIN



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### 3. Photograph of Meter





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#### 4. Influence factors for temperature, frequency and voltage

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The table represents the sum of the square values per load, determined via the following formula:-

 $\delta \in (T, U, f) = \sqrt{(\delta e^2 (T, I, \cos\varphi), \delta e^2 (U, I, \cos\varphi), \delta e^2 (f, I, \cos\varphi))}$ 

where

$\delta e(T, I, \cos \phi) =$	Additional error due to variation of the temperature at the same load
$\delta e(U, I, \cos \phi) =$	Additional error due to variation of the voltage at the same load
$\delta e(f, I, \cos \phi) =$	Additional error due to variation of the frequency at the same load



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### Influence factors for temperature, frequency and voltage (cont)

		Influence Factors for Temperature, Frequency & Voltage								
Current	PF Cos	-25	-10	5	30	40	55			
Imin	1.0	1.03	0.79	0.44	0.93	0.34	0.50			
ltr	1.0	0.80	0.62	0.35	0.46	0.23	0.45			
10ltr	1.0	0.76	0.56	0.36	0.13	0.16	0.34			
Imax	1.0	0.78	0.57	0.37	0.17	0.16	0.29			
ltr	0.5ind	1.37	0.66	0.18	0.36	0.60	0.99			
10ltr	0.5ind	1.06	0.46	0.34	0.26	0.31	0.50			
Imax	0.5ind	0.55	0.23	0.24	0.17	0.18	0.31			
ltr	0.8cap	1.76	1.10	0.39	0.49	0.17	0.32			
10ltr	0.8cap	1.47	0.89	0.34	0.08	0.10	0.28			
Imax	0.8cap	1.26	0.80	0.39	0.15	0.15	0.28			
L1										
ltr	1.0	0.82	0.64	0.22	0.64	0.62	0.78			
10ltr	1.0	0.76	0.54	0.33	0.12	0.16	0.35			
Imax	1.0	0.73	0.53	0.34	0.14	0.14	0.28			
ltr	0.5ind	0.48	0.48	0.55	0.54	0.67	1.08			
10ltr	0.5ind	0.99	0.35	0.44	0.33	0.38	0.60			
Imax	0.5ind	0.50	0.19	0.32	0.18	0.21	0.35			
L2										
ltr	1.0	0.83	0.64	0.20	0.69	0.37	0.62			
10ltr	1.0	0.74	0.52	0.32	0.11	0.14	0.33			
Imax	1.0	0.71	0.50	0.31	0.13	0.13	0.27			
ltr	0.5ind	1.50	0.48	0.27	0.66	1.10	1.36			
10ltr	0.5ind	1.22	0.50	0.32	0.27	0.34	0.58			
Imax	0.5ind	0.72	0.27	0.18	0.12	0.16	0.32			
L3										
ltr	1.0	1.06	0.79	0.41	0.34	0.34	0.60			
10ltr	1.0	0.79	0.58	0.35			0.38			
Imax	1.0	0.78	0.57	0.36	0.14	0.15	0.30			
ltr	0.5ind	0.82	0.34	0.29	0.67	0.69	1.25			
10ltr	0.5ind	0.92	0.34	0.19	0.20	0.22	0.43			
Imax	0.5ind	0.46	0.15	0.25	0.00	0.13	1.16			



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#### 5. Annex of Variants

Product Variant Identification Details:

#### POLYPHASE (A1120/A1140) MODEL CODE

V	/ <sub>ref</sub>	I <sub>b</sub>	I <sub>max</sub>	MODEL														
L-L					I													
L-L	L-N			TYPE (nameplate)								_			F			
												ļ			ļ		Ι.	
				example:	LN	13	A	AE	s N	$ _N$	N	в	вk	I N	в		N	N
PRODUCT/TERI	MINATION					┢	$\left  \right $	╈	┢	11		+	+	+	-		1	
Polyphase, BS/DIN termination																		
SERVICE TYPE 3Ph 4W for use of		L (No	t 3Ph 3W)			3	$\vdash$	+	+	+		-	+		+		+	+
	ect Connected and	5-10A		only		2	$\vdash$	+	+	┢	$\square$	+	+	+	+	-	+	+
CURRENT RAN	GE			-														
	d 20A - * (* is any n						A											
Direct Connected	d 10A – * (* is any n d 5A – * (* is any mi	Iltiple	of ID up to 10				B C	+	┢	┢		-	+	$\square$	+	-	+	+
CT Operated 1A							Ľ	+	┼	┢		+	+	+	+	-	+	+
CT Operated 5A							М	+	┢	┢			+	$\square$	+			+
CT Operated 1A							Ν											
	d (10A –100A ) -40	°C to 6	0°C operatio	n			Ρ				$\square$	-		$\square$	-		_	
<b>VOLTAGE</b>	N) (See note 2 for F	Ref volt	ano rannos)				-	A	+	┢		-	+	$\square$	+	-	+	+
				(LM2****** variants only)				Ê.	┢	┢	$\square$		+	+	+		+	+
	N) (See note 2 for F			, , , , , , , , , , , , , , , , , , ,				C	┢	┢								
105 – 127V (L –	L) (See note 2 for F	Ref volt	age ranges)	(LM2***** variants only)				D										
		0050.0	0.00.000.000	ACCURACY CLASS te 1) CI.C kWh,(EN 50470-3)				_	+	-		_	+	+	+		$\rightarrow$	+
				h 4W and 3Ph3W variant only				A	4									
				1) Cl.B kWh,(EN 50470-3)				E	3	┢	$\square$	+	+		+		+	+
				1) Cl.A kWh,(EN 50470-3)				C	;									
				1) Not OFGEM / MID Approved				E										
60 Hz Cl.2 kWh,		)53-21,	23 see note	1) Not OFGEM / MID Approved				F	-	$\vdash$		_			+	-	$\dashv$	+
No tamper detec									N	+		+	+		+	-	+	+
Two tamper dete									B	_	$\square$	+	+		+		+	+
		and C	T ratio progra	amming protection switch.					С	;								
HARDWARE – E	BUTTONS														$\rightarrow$			_
No buttons Two buttons										N B		_			+	-	$\dashv$	+
Backlit LCD, with	No buttons									C	$\square$	+	+	+	+	+	+	+
Backlit LCD, with										D		1		$\square$	+			+
HARDWARE – E																		
No external batte								<i>c</i>			N	_			$\rightarrow$		$ \rightarrow$	_
				odule cannot be fitted when an RS232 comm tion.(Iranian orders only)	ns m	oau	le is	TITLE	ea.		B C	-	-		+	-	+	+
OPERATIONAL		405 110		tion.(Iranian orders only)								+	+		+	-	+	+
Import kWh only												в	+	$\square$	$\uparrow$		$\neg$	+
Import kWh, Q1 and Q4 kvarh									С									
	Q2, Q3, Q4 kvarh a	and Imp	o kVAh								_	D			$\downarrow$		$ \rightarrow$	_
Imp/Exp kWh E F Imp/Exp kWh, Q1, Q2, Q3, and Q4 kvarh F								-		-	-	+	+					
Imp/Exp kWh, Q		wann									-	G	+		+	-	+	+
Imp/Exp kWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh											H							
	(Power Flow Insens											J			$\square$			
Import kWh, Q1 and Q4 kvarh (Power Flow Insensitive) Import kWh, Q1, Q2, Q3, Q4 kvarh and Imp kVAh (Power Flow Insensitive)								_	K	+	+	+	-	$\neg$	+			
								L R	+	+	+	$\vdash$	+	+				
								s	+	+	+	+	+	+				
Import kWh, Q1,				t Resistant Measurement) – 3Ph 4W varia	ants	on	у					T						
TARIFFS						_			_	_	_	$\square$			$\square$		1	
A1120 Multi Rate	9												B					



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A1140 Multi Rate (with load profile) C A1120 Multi Rate with Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use) D		$\square$							
						-			
No Output									
SO output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 27V DC only									
SO output, floating, 2 aux terminals. 12 kV isolation, replicating centre LED (kWh) 27V DC only	A								
SO output, floating, 2 aux terminals. 12 kV isolation, replicating left hand LED (kvarh) 27V DC only	R								
100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC	s								
100mA Relay output, floating, 2 aux terminals. 12 kV isolation, replicating centre LED (kWh) 230V AC, DC	D								
100mA Relay output, floating, 2 aux terminals. 12 kV isolation, replicating left hand LED (kvarh) 230V AC, DC	υ								
300 mA Relay output, floating, 2 aux terminals, 12kV isolation, indicating tariff/MD state, 230V AC only (Not pulsing)	т								
COMMUNICATIONS									
No Serial Comms.		N	_						
RS232 Serial Comms Note! An RS232 comms module cannot be fitted when an external battery module is fitted. OTHER OPTIONS		R	+		_	_			
Standard (Extended) Terminal cover		+	в	$\square$	+				
Standard (Extended) Terminal cover with cut-out			c		+				
Standard (Extended) Terminal cover plus 9.0mm main terminal bores			Ď		1				
Short Terminal Cover			E						
Standard (Extended) Terminal cover with additional voltage terminals			F						
Standard (Extended) Terminal cover with cut-out and additional voltage terminals									
Standard (Extended) Terminal cover plus 9.0mm main terminal bores and additional voltage terminals			Η						
Standard (Extended) Terminal cover plus 9.5mm main terminal bores. RS232 connection is via flying leads			J						
Standard (Extended) Terminal cover and main cover with voltage disconnect protection			ĸ						
A Cover Plate cannot be fitted to this variant – seek approval if RS232 or battery module is also required									
Standard (Extended) Terminal cover with slotted head screws		_	L						
Standard (Extended) Terminal cover with cut-out and slotted head screws		_	M						
Short Terminal Cover with slotted head screws		_	P		$\rightarrow$				
Standard (Extended) Terminal cover with cut-out plus 9.0mm main terminal bores		(	Q		$\rightarrow$				
Standard (Extended) Terminal cover with cut out and main cover with voltage disconnect protection			R						
A Cover Plate cannot be fitted to this variant – seek approval if RS232 or battery module is also required		+	+	$\vdash$	-				
Short (clear with smoked tint) Terminal Cover and main cover with voltage disconnect protection			s						
A Cover Plate cannot be fitted to this variant – seek approval if RS232 or battery module is also required FEATURE SET			+	$\vdash$	+				
8 TOU Registers, 4 MD Registers, 15 Historical Registers, DSM. See Note 4 for scheme			+	Α	+				
compatibility									
8 TOU Registers, 4 MD Registers, 15 Historical Registers, DSM, DLS time stamps and 12 external registers. Note! All new customers from November 2007. See Note 4 for scheme compatibility			-	С	1				
8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps 12 external registers, tamper flag in Load I	Pro	file		F	+				
daily billing and per phase registration. See Note 4 for scheme compatibility. <b>Note</b> ! This feature set requires the use of PMU version <b>3.1.4666</b> or later	-	-							
8 TOU Registers, 4 MD Registers, 15 Historical Registers, DSM, DLS time stamps and 12 external registers. Note! Register a by use of the "Register Zeroing Tool" is NOT available in this option. See Note 4 for scheme compatibility	zero	oin	g -	G					
8 TOU Registers, 4 MD Registers, 15 Historical Registers, DSM, DLS time stamps, 12 external registers and tamper flag in Load - H Profile. See Note 4 for scheme compatibility									
8 TOU Registers, 4 MD Registers, 15 Historical Registers, DSM, DLS time stamps, 12 external registers and tamper flag in Lo	bad	1	-	κ	1				
Profile. Low level password access to register and load profile data. See Note 4 for scheme compatibility									
REVISION SUFFIX									
Firmware 2-01178-Q (Feature set A only). Enhanced GPRS & COP 10					Q				
Firmware 2-01322-L (Feature set C and H). Enhanced GPRS & COP 10					L				
Firmware 2-01340-G (Feature set F). Daily billing & per phase registration & tampers (Note! Requires PMU version 3.1.4666			er).	_	G	_			
Firmware 2-01398-A (Feature set K). Enhanced GPRS & COP 10 and low level password access to register and load profile of Firmware 2-04045 A (Feature set C). Enhanced GPRS & COP 10. All prelister parallels	data	a		_	A	_			
Firmware 2-01345-A (Feature set G). Enhanced GPRS & COP 10 – No register zeroing					Z	_			
SPECIAL ADDITIONS – FIRMWARE					+				
None Phase angle definition as A1700i					-	N A			
SPECIAL ADDITIONS – HARDWARE					÷	4			
None				-	+	N			
· · · · · · ·				-	+				



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220 - 240V (L - N) (See note 2 for Ref voltage ranges)       A	POLYPHASE A1160 MODEL CODE										
TYPE (nameplate)         example: L P 3 A A B N P N H M V R B A H N         RepOLUCT/TERMINATION         Percolspan="2">Percolspan="2">Percolspan="2">Percolspan="2">Percolspan="2">Percolspan="2"         Percolspan="2"         Percolspan         Perco	v	ref	I <sub>b</sub>	I <sub>max</sub>	MODEL						
PRODUCT TERMINATION       Image: Project Connected only       Image: Project Connected Connected Only       Image: Project Connected Conne	L-L	L-N			TYPE (nameplate)		_				
PRODUCT TERMINATION       Image: Project Connected only       Image: Project Connected Connected Only       Image: Project Connected Conne						1 1	ļ			1	
PRODUCT TERMINATION PROVIDENCE TYPE PROVIDENCE TYPE PROVIDENCE TYPE Provide Connected only Provide Connected Connected only Provide Connected Connected Only Provide Connected Connected Only Provide Connected Connec					$example:  \mathbf{L}  \mathbf{P}   3   \mathbf{A}   \mathbf{A}   \mathbf{B}   \mathbf{N}  _{B}   \mathbf{N}   \mathbf{H}   \mathbf{M}   \mathbf{V}$	'R I	в	A	H	NI	
SERVICE TYPE SPA WT or use on: "Drect Connected only											
3Ph 4W for use on: "\screen Direct Connected only       3       1       1       1         CURRENT RANGE       Image: Connected 20A - * (* is any multiple of 1b up to 160A maximum)       A       1       1       1         CUTACE       Exponention       A       1 <t< td=""><td></td><td>IN termination</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><math>\perp</math></td></t<>		IN termination								$\perp$	
CURRENT RANGE       Image: Section of the sectin of the section of the section of the section of the		on: Pirect Con	necter	1 only	3	++	+		-	+	
Direct Connected 20A - 'f' is any multiple of ib up to 160A maximum) A  220 - 240V (L - N) (See note 2 for Fef voltage ranges) A  220 - 240V (L - N) (See note 2 for Fef voltage ranges) A  CCURACY CLASS  50 Hz C.1 kWh, CL2 kvarh (IEC 62055-21, 23 see note 1) CLB kWh.(EN 50470-3) B  CCURACY CLASS  50 Hz C.1 kWh, CL2 kvarh (IEC 62055-21, 23 see note 1) CLB kWh.(EN 50470-3) B  CCURACY CLASS  10 tamper detect switches  10 tamper detect switches 10 tamper detect		<u>0</u>	neoloc				+		-	+	
220 - 240V (L - N) (See note 2 for Fef voltage ranges)       A       A       A         S0 Hz C1 XWD, C12 Evant (IEC 62053-21, 23 see note 1) CLB KWh, (EN 50470-3)       B       A       A         No tamper detect switches       N       A       A       A         Tvo tamper detect switches       N       B       A       A         Warbard Carl Switches       N       B       A       A         Warbard State Switches       N       B       A       A         Warbard State Switches       N       B       A       A         Warbard Statery connection       B       A       A       B       A         No external battery connection. Note I An external battery module cannot be fitted when a comms module is fitted.       B       A       A         More Statery Carl Carl Carl Carl Carl Carl Carl Carl			nultiple	of Ib up to 1	60A maximum) A					$\pm$	
ACCURACY CLASS ACCURA	VOLTAGE										
50 Hz CJ. I KWh, CJ. Zkvarh (IEC 62053.21, 23 see note 1) CLB kWh, (EN 50470.3)       B       Image: Comparison of the compar	,	, ,	let vol	tage ranges)		++	+		-	+	
HARDWARE - SWITCHES       N       I         Two tamper detect switches (Terminal Cover & Main Cover)       B       I         HARDWARE - BUTTONS       B       I         Two burtons       B       I       I         HARDWARE - BATTERY       B       I       I         No external battery connection. Note: An external battery module cannot be fitted when a comms module is fitted.       B       I         OPERATIONAL MODES       ImplExp kVhn, 01, 02, 03, 04 kvarh and Imp I/Xpk KVAh       H       I       I         ImplExp kVhn, 01, 02, 03, 04 kvarh and Imp I/Xpk KVAh       H       I       I       I         A160 Muli Rate – with load profile and Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use)       L       I       I       I         A160 Muli Rate – with load profile and Instrumentation profile       N       I			53-21	. 23 see note	1) Cl.B kWh.(EN 50470-3)	+	+			-	
Two tamper detect switches (Terminal Cover & Main Cover) HARDWARE - BUTTONS Two buttons HARDWARE - BUTTONS Two buttons HARDWARE - BATTERY No external battery connection. Note! An external battery module cannot be fitted when a comms module is fitted. N External SV Battery connection. Note! An external battery module cannot be fitted when a comms module is fitted. OPERATIONAL MODES OPERATIONAL MODES OPERATIONAL MODES TARIES A 160 Mult Rate - with load profile and instrumentation profile and Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use) L HA160 Mult Rate - with load profile and instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N HA160 Mult Rate with load Profile NOT MULT ADVEN N COMMUNCATIONS N COMMUNCATIONS N Secolate Comms. N Secolate Comms. N Secolate Comms. N Secolate				,							
HARDWARE - BUTTONS       Image: Comparison of the image:										$\rightarrow$	
Two buttons       B       Image: Constraint of the second			al Cov	er & Main Co	ver)   <b>B</b>		-		_	+	
HARDWARE - BATTERY       N       I					B	++	+			+	
External SV Battery connection. Note! An external battery module cannot be fitted when a comms module is fitted.           B         ImpExp kWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         H           Import NWh, Q1, Q2, Q3, Q4 kvarh and Imp/Exp kVAh         K           Ital State = with load profile and Instrumentation profile         And Exp voltation and Imp Exp kVAh           At160 Mult Rate - with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level         N           At160 Mult Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level         N           Avxiliary 230V output         N         N         N           No Udput         N         N         N           OMAR Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC.         V         N           No Serial Comms.         Ne Serial Comms.<		BATTERY									
OPERATIONAL MODES       Implicing Number of the second of th		1									
Imp(Exp kVh, Q1, Q2, Q3, Q4 kvarh and Imp(Exp kVhh       H       T       T       T         Import kWh, Q1, Q2, Q3, Q4 kvarh and Imp kVAh (Theft Resistant Measurement)       T </td <td></td> <td></td> <td>e! An e</td> <td>xternal battery</td> <td>module cannot be fitted when a comms module is fitted.</td> <td></td> <td>_</td> <td></td> <td></td> <td>+</td>			e! An e	xternal battery	module cannot be fitted when a comms module is fitted.		_			+	
Import Wh, C1, C2, C3, C4 kvarh and Imp kVAh (Theft Resistant Measurement) T T ATIFE TARIFES A1160 Multi Rate – with load profile and Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use) L A1160 Multi Rate – with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level M A1160 Multi Rate – with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate – with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate – with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N Auxiliary Outputs No Outputs No Output No Output N Output (Insting, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC S 100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC. V Auxiliary 230V output (Phase 'C' + Neutral) COMMUNICATIONS No Serial Comms. Notel A comms module cannot be fitted when an external battery module is fitted. N Standard (Extended) Terminal Cover with voltage disconnect protection S1 Standard (Extended) Terminal Cover with voltage disconnect protection S1 Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection S1 Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection S3 Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection S4 STEATURE SET STEATURE SET STEATURE SET NOR SUFFX Firmware 2-01397-F Firmware 2-01397-F Firmware 2-01397-F Firmware 2-01397-F STEATURE SET NOR SUFFX Firmware 2-01397-F STEATURE SET NOR SUFFX STEATURE SET STEATU			and l	mp/Exp kVAł		++	+			+	
A1 160 Multi Rate – with load profile and Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use) A1160 Multi Rate with load profile and Instrumentation profile A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level N Auxiliary Outputs N Output N Auxiliary Outputs N Output (floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC. V Auxiliary 230V output (Phase 'C' + Neutral) COMMUNICATIONS N COMMUNICATIONS N COMMUNICATIONS N COMMUNICATIONS N COMMUNICATIONS N COTHER OPTIONS N COMMUNICATIONS N COMMUNICATI										+	
A1160 Multi Rate with load profile and Password Protected Register Zeroing and Zero Level Time Shift (Not for MID use)       L       L         A1160 Multi Rate with load profile and instrumentation profile       N       N       N         A1160 Multi Rate with load profile and instrumentation profile       N       N       N         Auxiliary Quiputs       N       N       N       N         No Output       N       N       N       N       N         100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC.       V       V       N	TARIFFS									$\square$	
A1160 Multi Rate       with load profile and instrumentation profile       M       I       I         A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level       N       I       I         A1160 Multi Rate with load profile and Instrumentation profile and Password Protected Register Zeroing and Zero Level       N       I       I         Auxiliary Outputs       N       I       I       I       I         No Output       N       I       I       I       I       I         100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC.       V       I <td< td=""><td></td><td></td><td>d Doo</td><td>oward Dratas</td><td></td><td>++</td><td></td><td></td><td></td><td><math>\rightarrow</math></td></td<>			d Doo	oward Dratas		++				$\rightarrow$	
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Inme snitt (Not for MiD use)       N       Image: No Output       N       N       Image: No Output       N       Image: No Output       N       Image: No Output       N       Image: No Output       N       N       Image: No Output       N       N       Image: No Output       N       Image: No Output       N       N       N       N       Image: No Output       N       N       N       N       N       N       N       N       N       N       N       N       N       N       N       <					refile and Password Protected Perioter Zeroing and Zero Lovel					+	
No Output       N										$\perp$	
100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC.       S       I         100mA Relay output, floating, 2 aux terminals. 12 kV isolation (Configurable pulse duration/value) 230V AC, DC.       V       I         Auxiliary 230V output (Phase 'C' + Neutral)       V       I       I         COMMUNICATIONS       N       I       I         No Serial Comms.       Notel A comms module cannot be fitted when an external battery module is fitted.       R       I         OTHER OPTIONS       I       I       I       I         Short Terminal Cover and Main Cover with voltage disconnect protection       S       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       K       I       I         B TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily b		ts			N N		+		-	+	
Auxiliary 230V output (Phase 'C' + Neutral)       V       V       V       V         COMMUNICATIONS       N       V </td <td></td> <td>tput, floating, 2 aux</td> <td>termin</td> <td>als. 12 kV iso</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+</td>		tput, floating, 2 aux	termin	als. 12 kV iso						+	
No Serial Comms.       N					plation (Configurable pulse duration/value) 230V AC, DC.	/				╈	
RS232 Serial comms. Note! A comms module cannot be fitted when an external battery module is fitted.       R       I       I         OTHER OPTIONS       E       I       I       I         Short Terminal Cover       E       I       I       I         Short Terminal Cover and Main Cover with voltage disconnect protection       S       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       K       I       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       R       I       I         Standard (Extended) Terminal Cover Part Main Cover with voltage disconnect protection       R       I       I         B TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later.       I       I         Brimware 2-01397-E (Feature set A)       H	COMMUNICATIO	ONS SNC									
OTHER OPTIONS       E       I       <											
Short Terminal Cover       E       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       S       Image: Short Terminal Cover       B       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       K       Image: Short Terminal Cover and Main Cover with voltage disconnect protection       R       Image: Short Terminal Cover and Cover and Main Cover screws       Image: Short Terminal Screws and Shear head main cover screws       Image: Short Terminal Screws and Shear head main cover screws       Image: Short Terminal Screws and Shear head main cover screws       Image: Short Terminal Screws and Shear head ma			is moc	lule cannot b	e fitted when an external battery module is fitted.	R	+		-	+	
Short Terminal Cover and Main Cover with voltage disconnect protection       S       I         Standard (Extended) Terminal Cover       B       I         Standard (Extended) Terminal Cover with cut-out       C       I         Standard (Extended) Terminal Cover with cut-out       C       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       K       I         Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       R       I         FEATURE SET       I       I       I         8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase       I       I         registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later       I       I         8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase       I       I         Registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later       I       I         B TetVISION SUFFIX       I       I       I       I         Firmware 2-01397-F       I       I       I       I         SPECIAL ADDITIONS – FIRWARE       I       I       I         <							E			+	
Standard (Extended) Terminal Cover with cut-out       C       <	Short Terminal C	over and Main Cove		voltage disc	onnect protection	:	S				
Standard (Extended) Terminal Cover and Main Cover with voltage disconnect protection       K				<u> </u>			_			$\rightarrow$	
Standard (Extended) Terminal Cover with cut out and Main Cover with voltage disconnect protection       R <t< td=""><td></td><td>,</td><td></td><td></td><td>ith voltage disconnect protection</td><td></td><td></td><td></td><td>+</td><td>+</td></t<>		,			ith voltage disconnect protection				+	+	
8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later       - A       - A       - A         8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later.       - B       - B         8 TOU Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later.       - B       - B         8 TOU SUFFIX       Firmware 2-01397-E (Feature set A)       H       -         9 Firmware 2-01397-F       SPECIAL ADDITIONS – FIRMWARE       N         None       Additional Firmware Function (Phase angle definition as A1700i)       A       N         SPECIAL ADDITIONS – HARDWARE       I       I         None (Socket Head M8 main terminal screws and shear head main cover screws)       I       I         Slotted Head M8 main terminal screws sealed main cover screws       I       I         Slotted Head M8 main terminal screws sealed main cover screws       I       I         Slotted Head M8 main terminal screws sealed main cover screws       I       I							_			+	
registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later 8 TOU Registers, 4 MD Registers, 24 Historical Registers, DSM, DLS time stamps, 12 external registers, daily billing, per phase registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later. (For multi-drop applications) REVISION SUFFIX Firmware 2-01397-E (Feature set A) Firmware 2-01397-F SPECIAL ADDITIONS – FIRMWARE None Additional Firmware Function (Phase angle definition as A1700i) SPECIAL ADDITIONS – HARDWARE None (Socket Head M8 main terminal screws and shear head main cover screws) Slotted Head M8 main terminal screws and shear head main cover screws Slotted Head M8 main terminal screws sealed main cover screws Slotted Head M8 main terminal screws sealed main cover screws	FEATURE SET	,									
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registration, tamper flag in Load Profile. Note! This feature set requires the use of SmartSet version 1.1 or later. (For multi-drop applications) REVISION SUFFIX Firmware 2-01397-E (Feature set A) Firmware 2-01397-F SPECIAL ADDITIONS – FIRMWARE None None None SPECIAL ADDITIONS – HARDWARE None (Socket Head M8 main terminal screws and shear head main cover screws) Slotted Head M8 main terminal screws sealed main cover screws Socket Head M8 main terminal screws sealed main cover screws Slotted										+	
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Firmware 2-01397-E (Feature set A)       H         Firmware 2-01397-F       SPECIAL ADDITIONS – FIRMWARE         None       N         Additional Firmware Function (Phase angle definition as A1700i)       A         SPECIAL ADDITIONS – HARDWARE       N         None (Socket Head M8 main terminal screws and shear head main cover screws)       I         Slotted Head M8 main terminal screws and shear head main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I										$\rightarrow$	
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SPECIAL ADDITIONS - FIRMWARE       N         None       N         Additional Firmware Function (Phase angle definition as A1700i)       A         SPECIAL ADDITIONS - HARDWARE       A         None (Socket Head M8 main terminal screws and shear head main cover screws)       A         Slotted Head M8 main terminal screws and shear head main cover screws       A         Socket Head M8 main terminal screws sealed main cover screws       A         Slotted Head M8 main terminal screws sealed main cover screws       A         Slotted Head M8 main terminal screws sealed main cover screws       A         Slotted Head M8 main terminal screws sealed main cover screws       A	Firmware 2-01397-F										
Additional Firmware Function (Phase angle definition as A1700i)       A         SPECIAL ADDITIONS – HARDWARE       Image: Constraint of the second seco		'IONS – FIRMWAR	E								
SPECIAL ADDITIONS - HARDWARE       Image: Constraint of the sector of the	None	oro Eurotion (Dh		dofiniti	41700)				-	_	
None (Socket Head M8 main terminal screws and shear head main cover screws)       I         Slotted Head M8 main terminal screws and shear head main cover screws       I         Socket Head M8 main terminal screws sealed main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I         Slotted Head M8 main terminal screws sealed main cover screws       I	SPECIAI ADDI	are Function (Phase IONS – HARDWAR	e anglé RE	e demnition as	A 17001)			$\rightarrow$	+	<u>A</u>	
Slotted Head M8 main terminal screws and shear head main cover screws       Image: Constraint of the screws screws in the s				ws and shea	r head main cover screws)			$\neg$	+	1	
Slotted Head M8 main terminal screws sealed main cover screws	Slotted Head M8	main terminal screv	ws and	d shear head	main cover screws					ŀ	
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000	EC-Type Examination Certificate Number:							
SGS	0120/ SGS0223							
· ·	Issue Number: 1	Dated: 22 <sup>nd</sup> February 2016						

Modifications to the meter(s) described according to approval No.**UK/ 0120/ SGS0223** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).