

EU-TYPE EXAMINATION CERTIFICATE

MEMF ELECTRICAL INDUSTRIES CO.
New Industrial Area Stage 3, Street 179
P.O. Box: 355989, 11383, Riyadh
Saudi Arabia

EU-Type Examination

Certificate No.

1557-20

Revision 1



Type S34U18
Object Electronic three-phase four-wire energy meter.
Transformer connected

The object has been assessed and meets the requirements of

EU Directive 2014/32/EU,
Module B

The energy meter(s) meet(s) the essential requirements of Annex V of EU Directive 2014/32/EU, on the harmonization of the laws of Member States relating to the making available on the market of measuring instruments (recast).

This Certification is based on the report(s) listed in the report list in this Certificate.

This Certificate is valid until: March 14, 2034.

This Certificate comprises 9 pages in total.

Issued by KEMA B.V.
Klingelbeekseweg 195,
Arnhem, The Netherlands
Notified Body 2290

Alessandro Bertani
Director,
Services & Smart Technologies

Arnhem, March 14, 2024



REVISION OVERVIEW

The highest revision always replaces the earlier issued versions.

Rev. No.	Date of issue	Reason
0	December 11, 2020	First issue
1	March 14, 2024	Report 1558-24 added

REPORT LIST

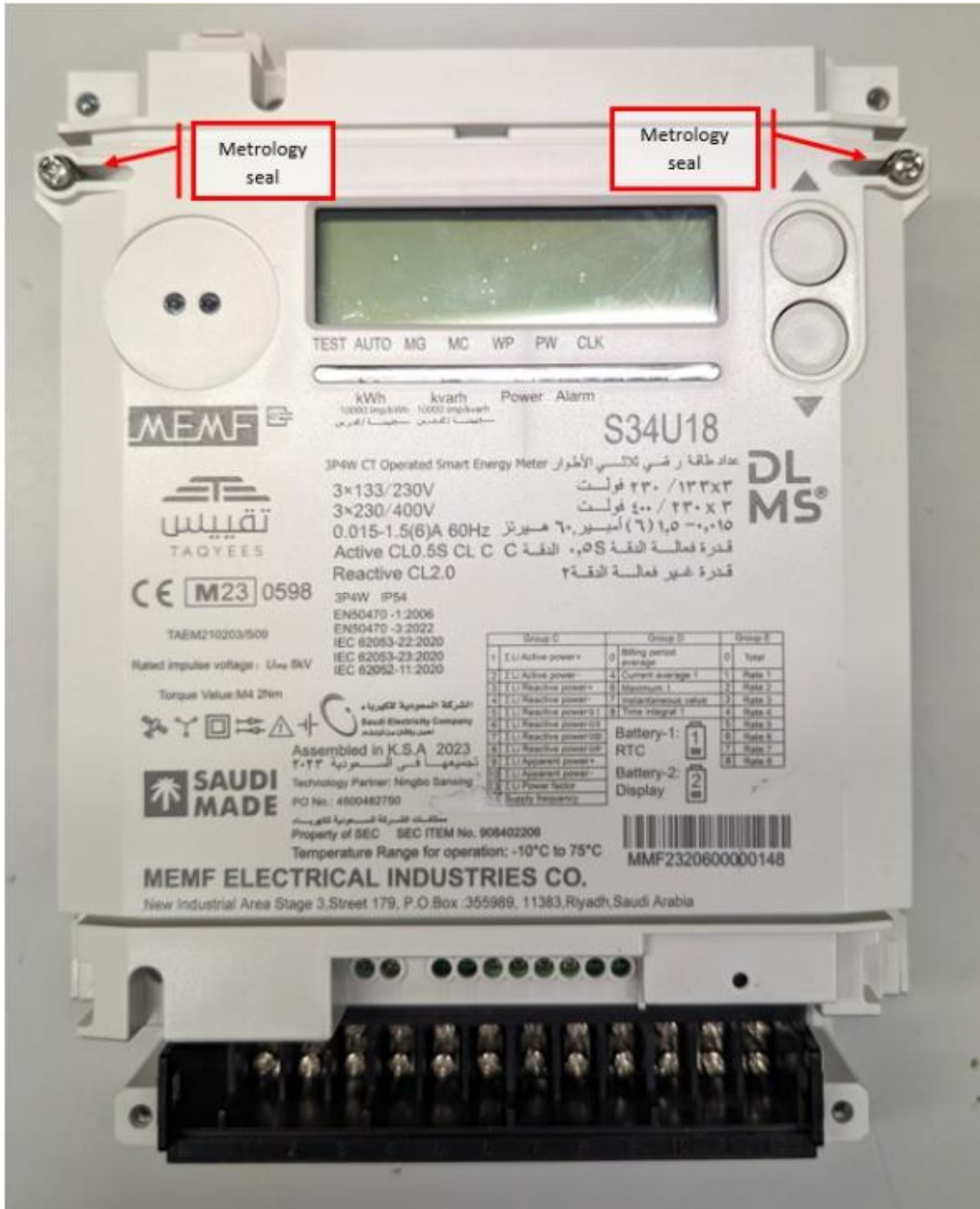
This Certificate is issued based on the following reports.

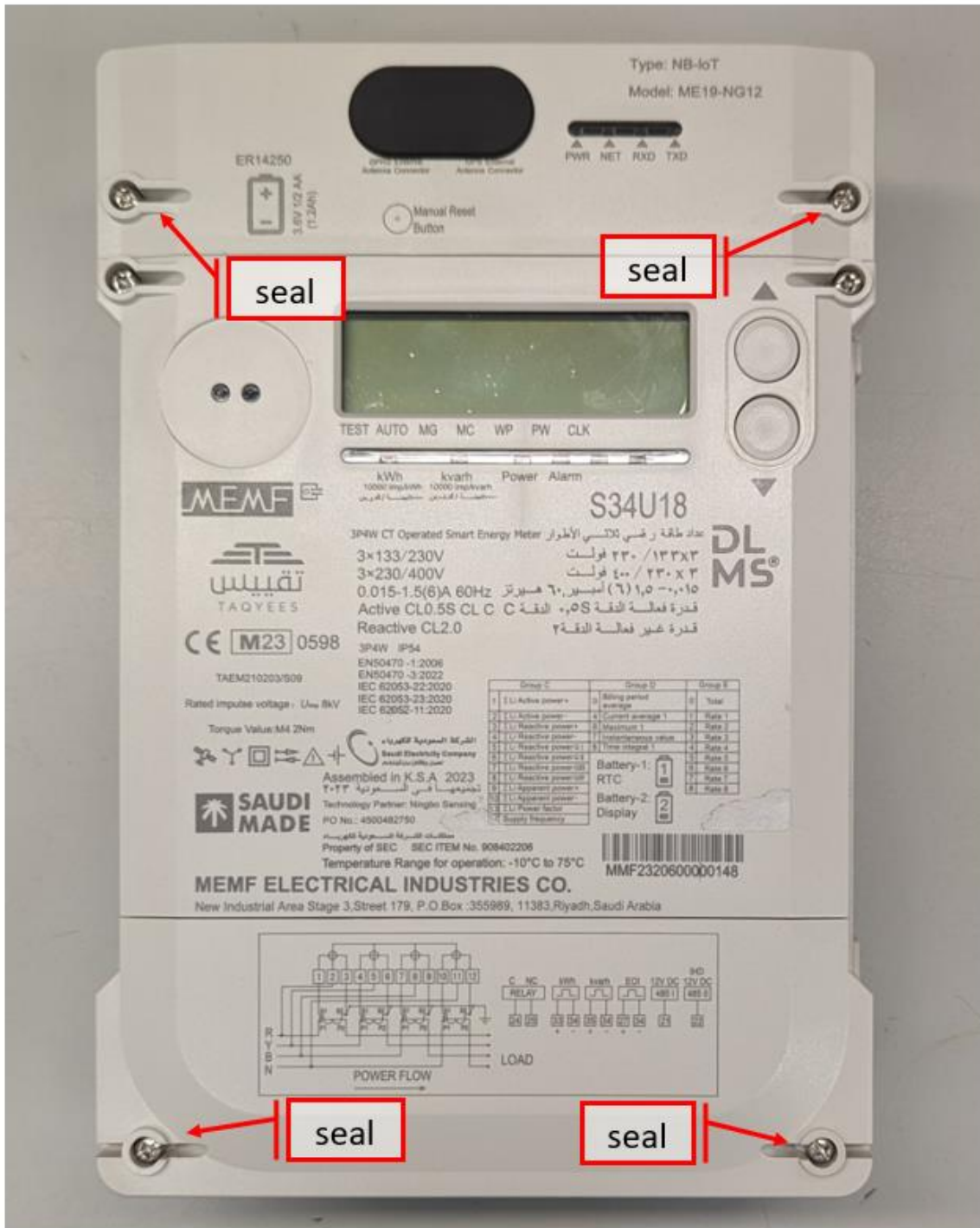
Report number	revision	Firmware version
1556-20	V1	P3742
1558-24	R0	V1.00.09

1 TECHNICAL DATA

Manufacturer	MEMF ELECTRICAL INDUSTRIES CO. New Industrial Area Stage 3, Street 179 P.O. Box: 355989, 11383, Riyadh Saudi Arabia		
Production location	MEMF ELECTRICAL INDUSTRIES CO. New Industrial Area Stage 3, Street 179 P.O. Box: 355989, 11383, Riyadh Saudi Arabia		
Type	S34U18		
Model	-		
Connection	Tranformer connected		
Type of circuit	3P4W		
Accuracy class Wh	0,5S/C		
Accuracy class varh	2		
Standard	IEC 62052-11 IEC 62053-22/23 EN 50470-3		
Meter constant	10000 imp/kWh 10000 imp/kvarh		
V range	3x133/230 V 3x230/400 V		
I range I_{min} - I_n (I_{max})	0.015-1.5(6) A		
Frequency	60 Hz		
Temperature range	-40 .. 75 °C		
Use	Outdoor, category 2		
IP rating	IP54		
Protection Class	II		
Impulse voltage	8 kV		
Internal clock	Crystal controlled		
Environmental class	M1, M2, E1 and E2, CISPR32 class B		
LR Firmware ID	V1.00.09		
LR Firmware CRC	3B6C		
Register	LCD		
Registry method(s):	Vectoral computation method		

2 PHOTOGRAPHS AND SEALING





3 EXAMPLES OF NAME PLATES





TAEM210203/S09

Rated impulse voltage: $U_{imp} 8kV$

Torque Value: M4 2Nm



kWh kvarh Power Alarm
10000 imp/kWh 10000 imp/kvarh
عداد طاقة / العددين / العددين

S34U18

3P4W CT Operated Smart Energy Meter عداد طاقة رقمي ثلاثي الأطوار

3×133/230V فولت ٢٣٠ / ١٣٣×٣
3×230/400V فولت ٤٠٠ / ٢٣٠×٣
0.015-1.5(6)A 60Hz أمبير ٦٠ هيرتز ١,٥ - ٠,٠١٥
Active CL0.5S CL C القدرة النقية ٠,٥S قدرة فعالة النقية
Reactive CL2.0 قدرة غير فعالة النقية

3P4W IP54
EN50470 -1:2006
EN50470 -3:2022
IEC 62053-22:2020
IEC 62053-23:2020
IEC 62052-11:2020

الشركة السعودية للكهرباء
Saudi Electricity Company
الهيئة العامة للكهرباء والمياه

Assembled in K.S.A 2023
تجميعها في السعودية ٢٠٢٣
Technology Partner: Ningbo Sankang
PO No.: 4500482750

ممتلكات الشركة السعودية للكهرباء
Property of SEC SEC ITEM No. 908402208
Temperature Range for operation: -10°C to 75°C



Group C	Group D	Group E
1 I L Active power +	0 Billing period average	0 Total
2 I L Active power -	4 Current average 1	1 Rate 1
3 I L Reactive power +	5 Maximum 1	2 Rate 2
4 I L Reactive power -	7 instantaneous value	3 Rate 3
5 I L Reactive power G1	8 Time integral 1	4 Rate 4
6 I L Reactive power G2		5 Rate 5
7 I L Reactive power G3		6 Rate 6
8 I L Apparent power +		7 Rate 7
10 I L Apparent power -		8 Rate 8
13 I L Power factor		
17 Supply frequency		

Battery-1: 1
RTC

Battery-2: 2
Display



MMF2320600000148

MEMF ELECTRICAL INDUSTRIES CO.
New Industrial Area Stage 3, Street 179, P.O.Box :355989, 11383, Riyadh, Saudi Arabia

4 CALCULATION OF THE COMPOSITE ERROR / MPE

During the type approval test the intrinsic errors for temperature, voltage and frequency variation are determined per load point. The composite error is determined with the following formula:

$$\varepsilon_m = \sqrt{\varepsilon^2(I, \cos\varphi) + \delta^2(T, I, \cos\varphi) + \delta^2(U, I, \cos\varphi) + \delta^2(f, I, \cos\varphi)}$$

Where

$\varepsilon^2(I, \cos\varphi)$ = Intrinsic error of the meter at a certain load

$\delta^2(T, I, \cos\varphi)$ = Additional error due to the variation of the temperature at the same load

$\delta^2(U, I, \cos\varphi)$ = Additional error due to the variation of the voltage at the same load

$\delta^2(f, I, \cos\varphi)$ = Additional error due to the variation of the frequency at the same load

Results are in the table below:

Serial number:		MMF232060000121									
Wh, 230/400 V, 0,015-1,5(6) A, 60 Hz											
		Composite error									
Current	cosφ	Phase	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C	75°C
I _{min}	1	3ph	0,36%	0,25%	0,15%	0,06%	0,00%	0,02%	0,07%	0,14%	0,17%
I _{tr}	1	3ph	0,37%	0,24%	0,14%	0,06%	0,01%	0,02%	0,07%	0,14%	0,17%
I _{tr}	1	1ph,1	0,30%	0,20%	0,12%	0,06%	0,05%	0,05%	0,09%	0,18%	0,22%
I _{tr}	1	1ph,2	0,46%	0,32%	0,19%	0,09%	0,06%	0,06%	0,08%	0,13%	0,15%
I _{tr}	1	1ph,3	0,33%	0,22%	0,13%	0,05%	0,01%	0,02%	0,06%	0,13%	0,16%
I _{tr}	0,5i	3ph	0,42%	0,29%	0,17%	0,07%	0,02%	0,04%	0,08%	0,16%	0,20%
I _{tr}	0,5i	1ph,1	0,36%	0,26%	0,16%	0,06%	0,02%	0,04%	0,10%	0,22%	0,28%
I _{tr}	0,5i	1ph,2	0,52%	0,35%	0,20%	0,08%	0,01%	0,01%	0,04%	0,11%	0,14%
I _{tr}	0,5i	1ph,3	0,38%	0,26%	0,15%	0,06%	0,02%	0,03%	0,07%	0,14%	0,18%
I _{tr}	0,8c	3ph	0,35%	0,23%	0,13%	0,05%	0,00%	0,02%	0,07%	0,13%	0,16%
I _n	1	3ph	0,37%	0,25%	0,15%	0,07%	0,03%	0,04%	0,08%	0,14%	0,17%
I _n	1	1ph,1	0,31%	0,21%	0,12%	0,06%	0,05%	0,06%	0,09%	0,16%	0,19%
I _n	1	1ph,2	0,46%	0,32%	0,19%	0,09%	0,06%	0,06%	0,08%	0,13%	0,16%
I _n	1	1ph,3	0,33%	0,22%	0,13%	0,05%	0,02%	0,02%	0,06%	0,12%	0,15%
I _n	0,5i	3ph	0,42%	0,28%	0,16%	0,07%	0,03%	0,04%	0,06%	0,13%	0,16%
I _n	0,5i	1ph,1	0,35%	0,24%	0,14%	0,05%	0,02%	0,02%	0,06%	0,14%	0,18%
I _n	0,5i	1ph,2	0,51%	0,34%	0,20%	0,08%	0,04%	0,04%	0,06%	0,12%	0,15%
I _n	0,5i	1ph,3	0,38%	0,27%	0,16%	0,08%	0,05%	0,06%	0,07%	0,13%	0,16%
I _n	0,8c	3ph	0,35%	0,23%	0,13%	0,05%	0,01%	0,02%	0,07%	0,14%	0,17%
I _{max}	1	3ph	0,36%	0,25%	0,15%	0,07%	0,05%	0,05%	0,09%	0,15%	0,18%
I _{max}	1	1ph,1	0,30%	0,21%	0,12%	0,06%	0,05%	0,06%	0,09%	0,17%	0,20%
I _{max}	1	1ph,2	0,45%	0,31%	0,18%	0,09%	0,06%	0,06%	0,08%	0,13%	0,16%
I _{max}	1	1ph,3	0,32%	0,21%	0,12%	0,05%	0,02%	0,03%	0,06%	0,12%	0,15%
I _{max}	0,5i	3ph	0,39%	0,26%	0,17%	0,10%	0,08%	0,08%	0,10%	0,15%	0,18%
I _{max}	0,5i	1ph,1	0,33%	0,23%	0,15%	0,10%	0,09%	0,10%	0,13%	0,18%	0,21%
I _{max}	0,5i	1ph,2	0,47%	0,32%	0,20%	0,12%	0,10%	0,10%	0,11%	0,14%	0,16%
I _{max}	0,5i	1ph,3	0,35%	0,25%	0,16%	0,11%	0,09%	0,10%	0,11%	0,15%	0,18%
I _{max}	0,8c	3ph	0,35%	0,24%	0,14%	0,06%	0,05%	0,05%	0,09%	0,15%	0,17%
Requirements											
I _{min}	1	3ph	2,00%	1,70%	1,30%	1,00%	1,00%	1,30%	1,70%	2,00%	2,00%
>I _{min}	Any	3ph	1,50%	1,30%	1,00%	0,70%	0,70%	1,00%	1,30%	1,50%	1,50%
>I _{min}	Any	1ph	2,00%	1,70%	1,30%	1,00%	1,00%	1,30%	1,70%	2,00%	2,00%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
S34U18	<ul style="list-style-type: none">• Communication options:• optical port• RS485• Pulse output• external relay

END OF DOCUMENT

The laboratories of KEMA Labs are:

- CESI S.p.A., Milan, Italy, accredited by ACCREDIA in accordance with ISO/IEC 17025:2017 under no. 0030L.
- FGH Engineering & Test GmbH, Mannheim, Germany, accredited by DAkKS in accordance with DIN EN ISO/IEC 17025:2018 under no. D-PL-12110-01-00.
- IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH, Berlin, Germany accredited by DAkKS in accordance with DIN EN ISO/IEC 17025: 2018 under nos. D-PL-12107-01-00 and D-K-12107-01-00.
- KEMA B.V., Arnhem, The Netherlands, accredited by RvA in accordance with EN ISO/IEC 17025:2017 under nos. L020, L218 and K006.
- KEMA Labs, Zkušebnictví, a.s., Prague, the Czech Republic, testing laboratory no. 1035 accredited by CAI in accordance with ČSN EN ISO/IEC 17025:2018.
- KEMA-Powertest, LLC, Chalfont, United States, accredited by A2LA in accordance with ISO/IEC 17025:2017 under no. 0553.01.

Tests are carried out under the scope of accreditation, unless otherwise indicated in the chapter 'Tests carried out'.