



EU Type Examination Certificate Number: **0120/SGS0401**

Bytronic S.r.l.

Como No.55
21050 Cairate (VA)
Italy

Instrument Identification:
BY50DR-MID

**Poly Phase, Active Import/ Export , Indoor, Multi-Function, Transformer Operated, Electricity
Meter**

Instrument Traceable Number
0120/SGS0401

has been assessed and certified as meeting the requirements of

EU Directive 2014/32/EU
on Measuring Instruments Annex II, Module 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 Annex V of EU Directive 2014/32/EU

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


This certificate is valid until 9th March 2024
Issue 1

Certification is based on report number(s) EMA174647/1/MID dated 30th January 2014
EMA264737

Authorised Signature


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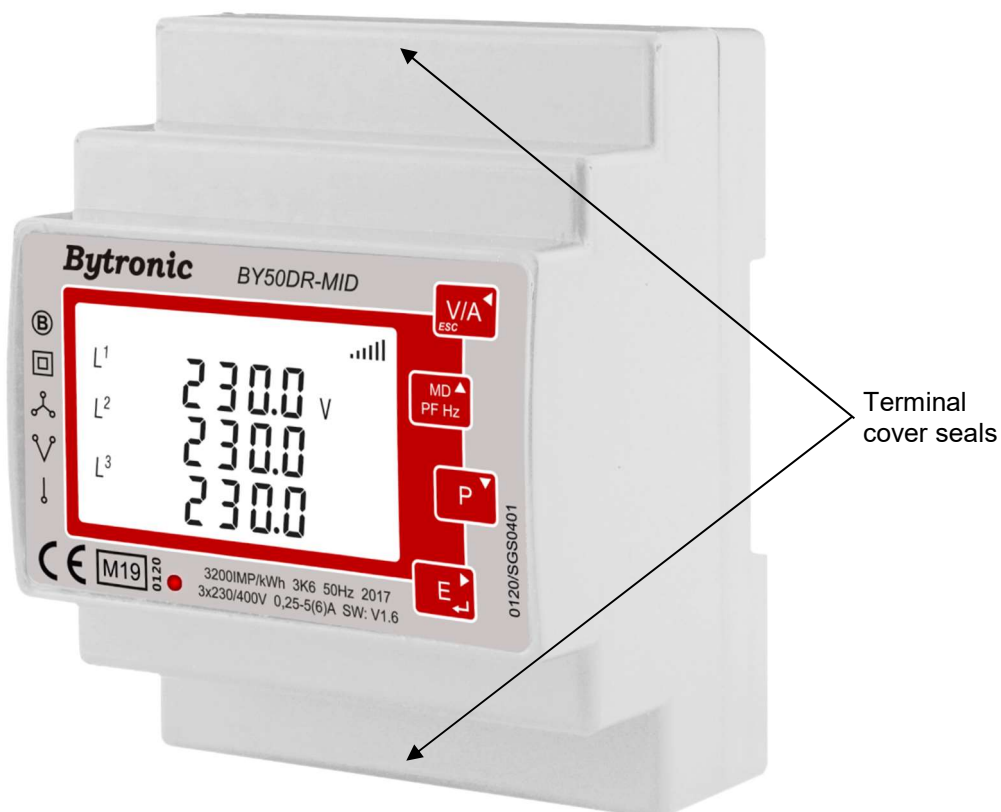
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1. Technical Data

Manufacturer	Bytronic S.r.l.
Meter Type	BY50DR-MID
Voltage Rating (U_n)	3x230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.25-5(6)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p4w, 3p3w, 1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	V1.6
CRC Checksum	0x000080FA
Identification Location	LCD/ Nameplate
Bill Of Materials Number	DH-JS-150046-1.4
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	3200imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	2 x Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Associated Documents

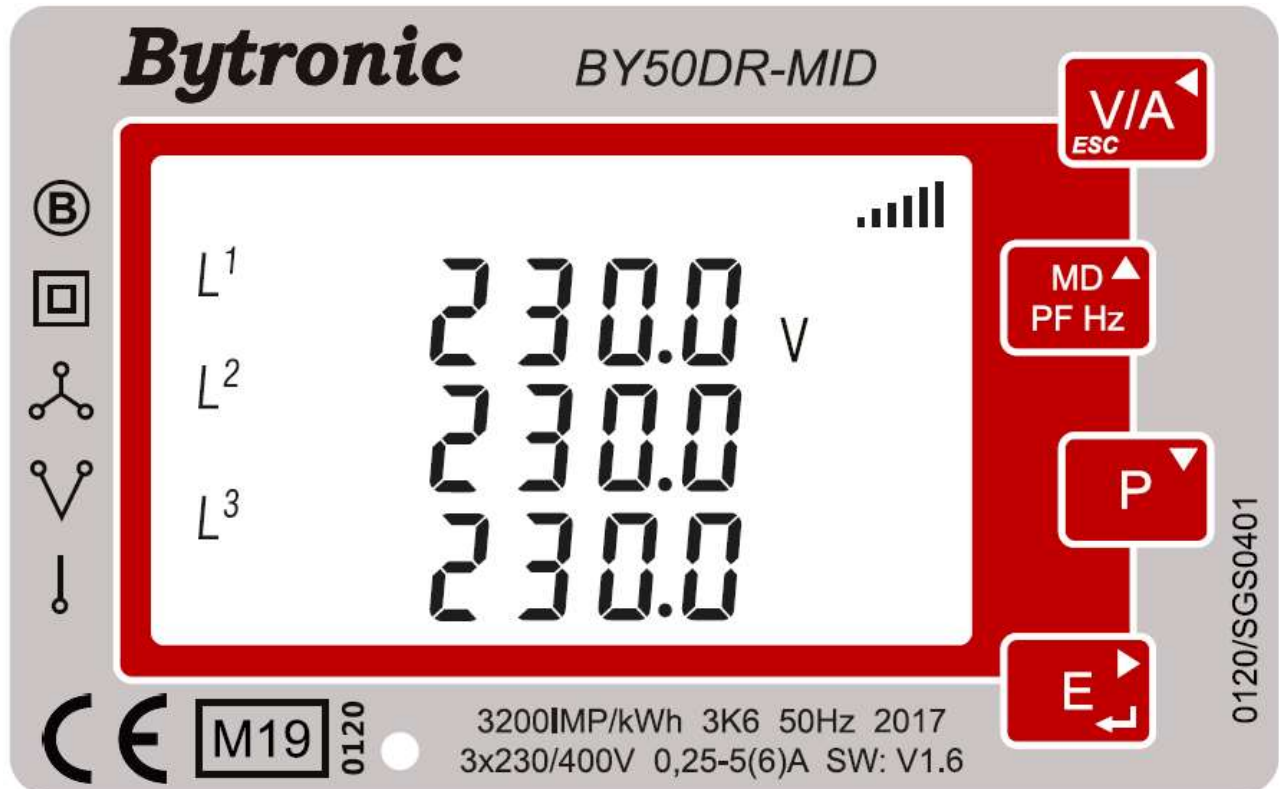
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2. Photograph of Meter and Sealing Plan



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3. Example of Nameplate



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4. Calculation of the composite error/ MPE

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


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

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 & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I _{min}	1.0	0.39	0.30	0.71	0.16	0.25	0.39
I _{tr}	1.0	0.33	0.27	0.28	0.18	0.25	0.47
10I _{tr}	1.0	0.35	0.31	0.24	0.22	0.29	0.49
I _{max}	1.0	0.36	0.31	0.25	0.21	0.28	0.47
I _{tr}	0.5ind	0.26	0.25	0.36	0.16	0.23	0.44
10I _{tr}	0.5ind	0.38	0.34	0.29	0.27	0.34	0.52
I _{max}	0.5ind	0.42	0.38	0.32	0.30	0.36	0.52
I _{tr}	0.8cap	0.31	0.42	0.43	0.32	0.37	0.50
10I _{tr}	0.8cap	0.32	0.27	0.21	0.17	0.26	0.45
I _{max}	0.8cap	0.34	0.28	0.21	0.15	0.24	0.43
L1							
I _{tr}	1.0	0.37	0.39	0.44	0.14	0.28	0.35
10I _{tr}	1.0	0.34	0.30	0.24	0.20	0.27	0.47
I _{max}	1.0	0.33	0.30	0.23	0.21	0.28	0.47
I _{tr}	0.5ind	0.41	0.56	0.96	0.14	0.15	0.16
10I _{tr}	0.5ind	0.49	0.46	0.42	0.38	0.43	0.62
I _{max}	0.5ind	0.49	0.46	0.42	0.39	0.44	0.60
L2							
I _{tr}	1.0	0.25	0.20	0.12	0.18	0.31	0.51
10I _{tr}	1.0	0.38	0.32	0.23	0.19	0.28	0.45
I _{max}	1.0	0.38	0.32	0.23	0.21	0.28	0.47
I _{tr}	0.5ind	0.12	0.12	0.13	0.25	0.38	0.59
10I _{tr}	0.5ind	0.36	0.33	0.25	0.25	0.32	0.49
I _{max}	0.5ind	0.39	0.35	0.28	0.27	0.34	0.49
L3							
I _{tr}	1.0	0.32	0.27	0.21	0.19	0.27	0.46
10I _{tr}	1.0	0.32	0.28	0.22	0.21	0.30	0.50
I _{max}	1.0	0.33	0.30	0.23	0.22	0.30	0.50
I _{tr}	0.5ind	0.32	0.32	0.24	0.20	0.29	0.53
10I _{tr}	0.5ind	0.34	0.29	0.23	0.23	0.33	0.54
I _{max}	0.5ind	0.35	0.31	0.25	0.13	0.33	0.53


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
BY50DR-MID	0.25-5(6)A – Polyphase, Active Import/Export kWh, Multifunction, Transformer Operated

Modifications to the meter(s) described according to approval No.**0120/SGS0401** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

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6. Document Revision History

Issue	Date	Comments
1	04/03/2019	Initial Issue

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END OF CERTIFICATE