

Vario-Series • Square Panel Meters

For Alternating Current



Bimetal movement, 90° scale
Narrow front frame per DIN 43 718, matt black



V-MQS 96

Technical Data

Front Dimensions mm Type	48 x 48 V-MQS 48	72 x 72 V-MQS 72	96 x 96 V-MQS 96	144 x 144 MQS 144
Scale Length mm	34	66	94	143
Class	3	3	3	3
Weight approx. (kg)	0.1	0.2	0.25	0.6
Operating Voltage	300 V	600 V	600 V	600 V
Test Voltage	3.5 kV	5.8 kV	5.8 kV	5.8 kV
Front Housing-Panel Protection	IP 52	IP 52	IP 52	IP 52
Fasteners (see next page)	leaf spring	screw clip S	screw clip S	screw clip G
Housing Material	polycarbonate	polycarbonate	polycarbonate	sheet metal
Interchangeable Scale	yes	yes	yes	no

Description

Analog panel meter with bimetal movement

Display

Scale Division Coarse-fine
 Pointer Beam pointer with knife-edge

Mechanical Design

Housing Material Polycarbonate, self-extinguishing and drip-proof per UL 94 V-0 or sheet metal housing (see above).
 Sheet metal housings available as option for type V-MQS72 and V-MQS96

Replaceable Glass windows, front frames and scales (interchangeable scales not available for panel meters with front panel dimensions of 144 x 144 mm)
 ⇒ May only be replaced under voltage-free conditions!

Terminals M4 screw terminals with self-lifting terminal clips. Screws can be turned with a cross-head or standard screw drivers

Contact Protection Available as option

Power Consumption

	Front Dimensions			
	48 x 48	72 x 72	96 x 96	144 x 144
Con. to Transformer sec. 1 A	ap. 1.1 VA	ap. 1.1 VA	ap. 1.1 VA	ap. 1.1 VA
sec. 5 A	ap. 1.9 VA	ap. 1.9 VA	ap. 1.9 VA	ap. 1.9 VA

Reference Conditions

Reference Quantities	Reference Conditions
Ambient Temperature Position of Use Other	23 °C ± 2°C control panel vertical ± 1° DIN EN 60 051

Overload Capacity

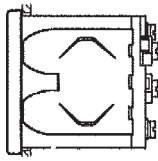
Continuous	120 % of rated value
Short-term	10 x of rated value; 1 s (I _{max} = 10 A)

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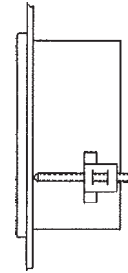


Leaf Spring



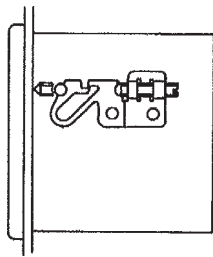
Control panel thickness 1 to 3 mm.
For size 48 x 48 mm, not appropriate for Mauell-Grid.
Also available as option for sizes 72 x 72 and 96 x 96 mm.

Screw Clip S



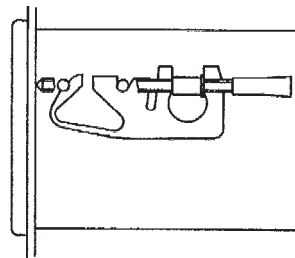
Control panel thickness 1 to 25 mm.
Special screw clamp M4 required for panel meters with front panel dimensions of 72 x 72 and 96 x 96 mm.
Also available as option for size 48 x 48 mm, not appropriate for Mauell-Grid.

Screw Clip G



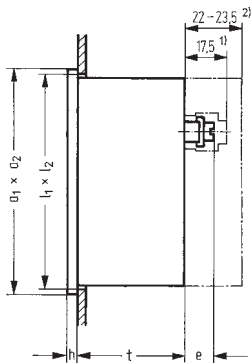
Control panel thickness 1 to 32 mm.
Special screw clamp M4 required for size 144 x 144 mm.

Fasteners B DIN 43 835



Control panel thickness 1 to 40 mm.
Screw clamp M4 available as option for:
Sheet metal housings 72 x 72 and 96 x 96 mm with cone head rivets and size 144 x 144 mm

Basic Dimensions



Dimensions for separate Current Transformer

1 A: 67 x 45 x 90 (B x T x H)
5 A: 67 x 51 x 90 (B x T x H)

Drawings to Scale (on request)

1303 A 2005 H

Ordering Example

Bimetal ammeter 96 x 96 mm
Connection to current transformer 25/5 A
Overload 1.2 x of rated value
Response time 15 min.

Techn. Data V-MQS 96	Order No. 1604M, BE11, BU5, CG25
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Front Dimensions mm	Nominal Dimensions mm		Cutout Dimensions mm	Installation Depth t	Terminals M4 e
	$a_1 \times a_2$	h			
48 x 48	48 x 48	5	$45^{+0.6} \times 45^{+0.6}$	43.5	12.5
72 x 72	72 x 72	5	$68^{+0.7} \times 68^{+0.7}$	43.5	12.5
96 x 96	96 x 96	5	$92^{+0.8} \times 92^{+0.8}$	43.5	12.5
144 x 144	144 x 144	8	$138^{+1} \times 138^{+1}$	44.5	12.5

1) Single terminal cover

2) Overall terminal cover (22 mm for panel meters with front panel dimensions of 48 x 48 mm only)

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Note:

Choose only one of the listed measuring inputs.

'A' = Extra Charge · '+' = Available without extra Charge · '-' = Not available

	Type Order No. ⇒	V-MQS 48 1662M	V-MQS 72 ¹⁾ 1601M	V-MQS 96 ¹⁾ 1604M	MQS 144 1620M
Alternating Current	+ ↓				
Direct Connection					
Range:					
0 ... 1 A	CC1, BU5 ²⁾	+	+	+	+
0 ... 5 A	CC5, BU5 ²⁾	+	+	+	+
Con. to Current Transformer sec. 1 A	BE10, BU5 ²⁾	+	+	+	+
Con. to Current Transfotmer sec. 5 A	BE11, BU5 ²⁾	+	+	+	+
Scale:					
1 A	CG1	+	+	+	+
5 A	CG5	+	+	+	+
10 A	CG10	+	+	+	+
15 A	CG15	+	+	+	+
20 A	CG20	+	+	+	+
25 A	CG25	+	+	+	+
30 A	CG30	+	+	+	+
40 A	CG40	+	+	+	+
50 A	CG50	+	+	+	+
60 A	CG60	+	+	+	+
75 A	CG75	+	+	+	+
100 A	CG100	+	+	+	+
150 A	CG150	+	+	+	+
200 A	CG200	+	+	+	+
250 A	CG250	+	+	+	+
300 A	CG300	+	+	+	+
400 A	CG400	+	+	+	+
500 A	CG500	+	+	+	+
600 A	CG600	+	+	+	+
750 A	CG750	+	+	+	+
800 A	CG800	+	+	+	+
0 ... > 1 A < 1 kA ³⁾	CG...	+	+	+	+
1 kA	CH1	+	+	+	+
5 kA	CH5	+	+	+	+
10 kA	CH10	+	+	+	+
0 ... > 1 kA ³⁾	CH...	+	+	+	+

1) For sheet metal housings with cone head rivets please see "Housing Variants"

2) Upper scale value = 120% of rated value

3) Specify in clear text

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Only one Identification No. with the same letter sequence may be chosen.

Order No. with Identification No. N (standard model) can be left out.

'N' = Standard Version · 'A' = Extra Charge · '+' = Available without extra Charge · '-' = Not available

	Type Order No. ⇒	V-MQS 48 1662M	V-MQS 72 1601M	V-MQS 96 1604M	MQS 144 1620M
GENERAL VARIANTS					
Identification + ↓					
Response Time					
Response time 15 min.	IB1	N	N	N	N
Response time 8 min.	IB2	+	+	+	+
Overload					
Overload 1.2 x of rated value	BU5	N	N	N	N
Overload 1.2 x of rated value with built in prot. cur. transf. 100 x of rated value / 1s	BU26	-	-	-	A
Overload 1.2 x of rated value with separated prot. cur. transf 100 x of rated value / 1s	BU27	A	A	A	-
Position of Use					
Control panel vertical	LA1	N	N	N	N
Control panel horizontal	LA2	+	+	+	+
Other (Please specify angle between scale and horizontal)	LA999	A	A	A	A
SCALE VARIANTS					
Scale					
In accordance with measuring input	GF99	N	N	N	N
Blank scale (lower and upper value markings, company logos, symbols)	GF24	+	+	+	+
Additional Imprint					
Second numbering (specify in clear text)	SK992	A	A	A	A
Inscription:					
Without additional inscription	SM99	N	N	N	N
Inscription ≤ 15 characters German	SM991	A	A	A	A
> 15 characters German	SM992	A	A	A	A
≤ 15 characters other language	SM993	A	A	A	A
> 15 characters other language	SM994	A	A	A	A
(Other language in Latin lettering, specify in clear text)					
Coloured mark red RAL 2002 (specify in clear text)	ST991	A	A	A	A
Coloured sector yellow RAL 1021, green RAL 6018 or red RAL 2002 (specify in clear text)	SU991	A	A	A	A
Scale / Pointer Colours					
Scale white; imprint und pointer black	SG99	N	N	N	N
Scale black; imprint und pointer white	SG1	A ¹⁾	A ¹⁾	A ¹⁾	A ¹⁾
Scale black; imprint und pointer yellow	SG2	A ¹⁾	A ¹⁾	A ¹⁾	A ¹⁾
Without scale; pointer black	SG10	+	+	+	-
Without scale; pointer white	SG11	A	A	A	-
Without scale; pointer yellow	SG12	A	A	A	-

1) Additional one-off costs for special scale printing on request

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Type Order No. ⇒	V-MQS 48 1662M	V-MQS 72 1601M	V-MQS 96 1604M	MQS 144 1620M
HOUSING VARIANTS				
Identification + ↓				
Front Frame Colours				
Matt black	MA2	N	N	N
Matt grey RAL 7037	MA11	A	A	A
Matt stone grey RAL 7032	MA12	A	A	A
Matt dark beige approx. RAL 1019	MA21	A	A	A
Glass Windows				
Standard version	MG99	N	N	N
Anti-glare glass	MG1	A	A	A
Housing				
Standard housing	ML99	N	N	N
Sheet metal housing with cone head rivets	ML4	-	A	A
Mounting				
2 Leaf springs	MN2	N	+	+
4 Leaf springs	MN1	A	A	A
Screw Clip S	MN14	A	N ¹⁾	N ¹⁾
Screw Clip G	MN13	-	-	-
Fastener B DIN 43 835	MN11	-	A ²⁾	A ²⁾
Identification				
Without Identification	MZ99	N	N	N
Identification on the back (Specify in clear text)	MZ998	A	A	A
Contact Protection				
Without terminal cover	VB99	N	N	N
Overall terminal cover	VB2	A	A	A
Single terminal cover	VB1	+	+	+

1) Standard version without extra charge

2) Available only in combination with Order No. MLX 4 (sheet metal housing with cone head rivets)