

Product Guide

Profile Series
300.U.001.06

Analog Panel Meters for Process Control Applications

Profile Range M Series

P PrS		with Moving-Coil Movement Profile Types
MP P		with Moving-Coil Movement Slim Edgewise Types
G PrS		with Moving-Coil Rectifier Movement Profile Types
MG G		with Moving-Coil Rectifier Movement Slim Edgewise Types
PQ /2		with Dual Moving-Coil Movement
PBQ PB PrS		with Moving-Coil Movement arranged in a Bridge Circuit
PQ P PrS		with Moving-Coil Movement for use with Thermocouples
W PrS		with Moving-Iron Movement Profile Types
PRE		Rectangular Format Instruments





General Data

Analog Panel Meters for Process Control Applications

Application

reliable instrumentation technology for standard applications

for mounting in switchboards
machine tools
mosaic grid panels

for measuring DC current or DC voltage,
AC current or AC voltage,
standard signals,
potentiometric position,
tap position,
temperature

Technical Data

scaling horizontal dial, optionally vertical dial,
lettering and
custom-logo possible to special order

pointer bar/knife-edge pointer

case details complying with DIN IEC 61 554
rectangular or square formats
stackable
to fit in mosaic grid panels (. 144x36 limited)

material of case pressed steel (.Q 72/96/144, . 72/96 PrS)
thermoplastics, flame-retardant
(.Q 48, . 48/144 PrS, M . x24, . 144x36)

material of window glass or optionally non-glaring glass

colour of bezel black or optionally gray

position of use vertical, optionally horizontal
or to be specified between 15 to 165°

panel fixing screw clamps

enclosure code IP 52 or as an option
IP 54 splash-water protected front

terminal safety protective sleeves or
full sized rear cover option

marine application optional (non-certified)

dimensions (in mm)

	.Q 48	.Q 72	.Q 96	.Q 144
square meters				
bezel	□ 48	□ 72	□ 96	□ 144
case	□ 45	□ 66.5	□ 90.5	□ 137
panel cutout	□ 45.2 ^{+0.3}	□ 68.3 ^{+0.4}	□ 92 ^{+0.8}	□ 138 ⁺¹
panel thickness	1 ... 15	1 ... 15	1 ... 15	1 ... 15
edgewise meters	. 48 PrS	. 72 PrS	. 96 PrS	. 144 PrS
bezel	48 x 24	72 x 36	96 x 48	144 x 72
case	43 x 17	66 x 32	91 x 43	137 x 67
panel cutout	45 ^{+0.6}	68 ^{+0.7}	92 ^{+0.8}	138 ^{+1.0}
	x 22.2 ^{+0.3}	x 33 ^{+0.6}	x 45 ^{+0.6}	x 68 ^{+0.7}
panel thickness	1 ... 25	1 ... 25	1 ... 12	≤40
slim edgewise meters	M. 48x24	M. 72x24	M. 96x24	. 144x36
bezel	48 x 24	72 x 24	96 x 24	144 x 36
case	43 x 17	66 x 17	92 x 18	137 x 32
panel cutout	45 ^{+0.6}	68 ^{+0.7}	92 ^{+0.8}	138 ^{+1.0}
	x 22.2 ^{+0.3}	x 22.2 ^{+0.3}	x 22.2 ^{+0.3}	x 33 ^{+0.6}
panel thickness	1 ... 25	1 ... 25	1 ... 25	1 ... 25



Short Form Data

Analog Panel Meters with Moving - Coil Movement Profile Types

P 48 PrS
P 72 PrS
P 96 PrS
P 144 PrS



Functional Principle

pivot and jewel moving-coil movement,
swivel-coil system (P 48 PrS),
core-magnet system (P 72/96/144 PrS)

Measuring Ranges

DC current 0 ... 50 µA up to
0 ... 60 A (P 144 PrS) /
0 ... 40 A (P 96 PrS) /
0 ... 25 A (P 72 PrS) /
0 ... 1 A (P 48 PrS)

DC voltage 0 ... 40 mV (P 72/96/144 PrS) /
0 ... 60 mV (P48 PrS)
up to 0 ... 600 V

for use on transducer 4 ... 20 mA (P 48 PrS)
(mechanically suppressed zero,
no zero adjustment)
0/4 ... 20 mA (P 72/96/144 PrS)
(electrically suppressed zero,
with zero adjustment)

for use with external shunt 0 ... 60 mV or 0 ... 150 mV
(scaling to DIN series)

accuracy class 1.5 or optionally class 1.0

Others

	P 48 PrS	P 72 PrS	P 96 PrS	P 144 PrS
mounting depth	75 mm	94 mm	107 mm	192 mm
weight approx.	0.08 kg	0.2 kg	0.45 kg	0.6 kg

additional options

special measuring ranges, range adjustment, 2nd measuring range,
2nd scale division, increased sensitivity, calibration to a firm internal
resistance value or a higher lead resistance, off-set zero, expanded
scale and others

additional data

refer to Data Sheet No. 010.D.201.##

additional meters with moving-coil movement

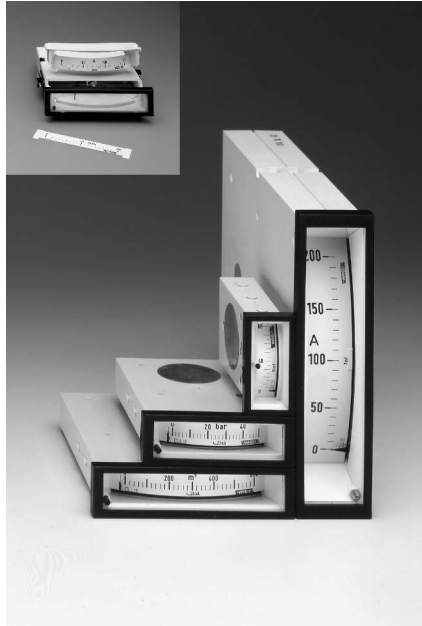
PQ 48/72/96/144 K (K-Series)
refer to Data Sheet No. 410.D.101.##
PSQ 48, PQ 72/96/144 RS (M-Series)
refer to Data Sheet No. 010.D.101.##



Short Form Data

Analog Panel Meters with Moving - Coil Movement Slim Edgewise Types

MP 48x24
MP 72x24
MP 96x24
P 144x36



Functional Principle

pivot and jewel moving - coil movement; swivel - coil system
MP 96x24 K with slide - in - dial

Measuring Ranges

DC current	0 ... 100 μ A up to 0 ... 1 A
DC voltage	0 ... 60 mV up to 0 ... 600 V
for use on	4 ... 20 mA (MP 48x24)
transducer	(mechanically suppressed zero, no zero adjustment)
	0/4 ... 20 mA (MP 72x24/96x24, P 144x36)
	(electrically suppressed zero, with zero adjustment)
for use with	0 ... 60 mV or 0 ... 150 mV
external shunt	(scaling to DIN series)
accuracy	class 1.5 acc. to DIN EN 60 051 - 1

Others

	MP 48x24	MP 72x24	MP 96x24	K P 144x36
mounting depth	75 mm	98 mm	118 mm	173 mm
weight approx.	0.08 kg	0.1 kg	0.12 kg	0.5 kg

additional options

special measuring ranges, increased sensitivity, calibration to a firm internal resistance value or a higher lead resistance, off - set zero, expanded scale and others

additional data refer to Data Sheet No. 010.D.301.##
additional meters with moving - coil movement
PQ 48/72/96/144 K (K - Series) refer to Data Sheet No. 410.D.101.##
PSQ 48, PQ 72/96/144 RS (M - Series) refer to Data Sheet No. 010.D.101.##



Short Form Data

Analog Panel Meters with Moving - Coil Rectifier Movement Profile Types

G 48 PrS
G 72 PrS
G 96 PrS
G 144 PrS



Functional Principle

pivot and jewel moving - coil movement;
series - connected rectifier incorporated,
swivel - coil system (G 48 PrS),
core - magnet system (G 72/96/144 PrS)

Measuring Ranges

AC current	0 ... 100 μ A up to 0 ... 25 A
AC voltage	0 ... 1.5 V up to 0 ... 600 V
for use on VT	0 ... N/100 V or 0 ... N/110 V
for use on CT	0 ... N/1 A or 0 ... N/5 A (scaling to DIN series; no overload range)
frequency range	40 Hz ... 50 Hz ... 10 kHz
accuracy	class 1.5 or optionally class 1.0

Others

same as P 48/72/96/144 PrS

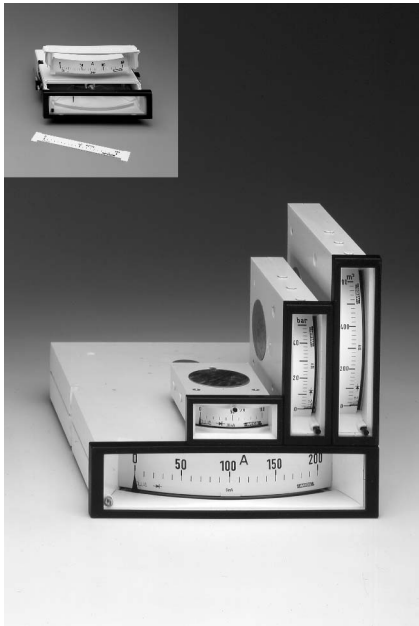
additional data refer to Data Sheet No. 015.D.201.##
additional meters with moving - coil rectifier movement
VQ 48/72/96/144 K (K - Series) refer to Data Sheet No. 415.D.101.##
GSQ 48, GQ 72/96/144 RS (M - Series) refer to Data Sheet No. 015.D.101.##



Short Form Data

Analog Panel Meters with Moving - Coil Rectifier Movement Slim Edgewise Types

MG 48x24
MG 72x24
MG 96x24
G 144x36



Functional Principle

pivot and jewel moving - coil movement;
series - connected rectifier incorporated, swivel - coil system
MG 96x24 K with slide - in - dial

Measuring Ranges

AC current	0 ... 100 μ A up to 0 ... 25 A
AC voltage	0 ... 1.5 V up to 0 ... 600 V
for use on current transformer	0 ... N/1 A or 0 ... N/5 A (scaling to DIN series; no overload range)
frequency range	40 Hz ... 50 Hz ... 10 kHz
accuracy	class 1.5 acc. to DIN EN 60 051 - 1

Others

	MG 48x24	MG 72x24	MG 96x24	KG 144x36
mounting depth	75 mm	98 mm	118 mm	173 mm
weight approx.	0.08 kg	0.1 kg	0.12 kg	0.5 kg

additional options

special measuring ranges, increased sensitivity, calibration to a firm internal resistance value and others

additional data refer to Data Sheet No. 015.D.301.##
additional meters with moving - coil rectifier movement **VQ 48/72/96/144 K** (K - Series) refer to Data Sheet No. 415.D.101.##
GSQ 48, GQ 72/96/144 RS (M - Series) refer to Data Sheet No. 015.D.101.##



Short Form Data

Analog Panel Meters with Dual Moving - Coil Movement

PQ 48 / 2



Functional Principle

2 pivot and jewel moving - coil movements, core - magnet systems

Measuring Ranges

Movement I (outer)

control deviation	internal resistance *)	pointer deflection	scale
-20 ... 0 ... +20 μ A	6 k Ω	$\pm 22.5^\circ$	-10 ... 0 ... +10
-20 ... 0 ... +20 μ A	6 k Ω	$\pm 22.5^\circ$	-20 ... 0 ... +20
-20 ... 0 ... +20 μ A	13 k Ω	$\pm 22.5^\circ$	-10 ... 0 ... +10
-20 ... 0 ... +20 μ A	13 k Ω	$\pm 22.5^\circ$	-20 ... 0 ... +20
-20 ... 0 ... +20 μ A	50 k Ω	$\pm 22.5^\circ$	-10 ... 0 ... +10
-20 ... 0 ... +20 μ A	50 k Ω	$\pm 22.5^\circ$	-20 ... 0 ... +20
-50 ... 0 ... +50 μ A	2 k Ω	$\pm 22.5^\circ$	-10 ... 0 ... +10
-50 ... 0 ... +50 μ A	2 k Ω	$\pm 22.5^\circ$	-20 ... 0 ... +20
-300 ... 0 ... +300 μ A	325 Ω	$\pm 22.5^\circ$	-10 ... 0 ... +10
-300 ... 0 ... +300 μ A	325 Ω	$\pm 22.5^\circ$	-20 ... 0 ... +20

regulating link position

regulating link position	internal resistance *)	pointer deflection	scale
0 ... 600 μ A	325 Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 20 mA **)	3 Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 3 V	30 k Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 10 V	100 k Ω	0 ... 90 $^\circ$	0 ... 100%

Movement II (inner)

regulating link position	internal resistance *)	pointer deflection	scale
0 ... 600 μ A	325 Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 20 mA **)	3 Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 3 V	30 k Ω	0 ... 90 $^\circ$	0 ... 100%
0 ... 10 V	100 k Ω	0 ... 90 $^\circ$	0 ... 100%

*) the resistance values are limited to a tolerance of $\pm 20\%$

**) optional mechanically suppressed zero, no zero adjustment

accuracy class 1.5 acc. to DIN EN 60 051 - 1

others

mounting depth	72 mm
weight approx.	0.09 kg

additional data refer to Data Sheet No. 017.D.101.##



Short Form Data

Analog Panel Meters with Moving - Coil Movement arranged in a Bridge Circuit

PBQ 72
PBQ 96
PBQ 144
PB 72 PrS
PB 96 PrS
PB 144 PrS



Functional Principle

pivot and jewel moving - coil movement, core - magnet system, arranged in a bridge circuit.
(External bridge circuit for PB 72 PrS model).

Measuring Ranges

for RTD (resistance thermometer)

measuring range	sensor
-220 ... +50°C	Pt 100 -
-100 ... +50°C	Pt 100 -
-20 ... +20°C	Pt 100, Ni 100
0 ... +40°C	Pt 100, Ni 100
-30 ... +60°C	Pt 100, Ni 100
0 ... +60°C	Pt 100, Ni 100
0 ... +100°C	Pt 100, Ni 100
0 ... +150°C	Pt 100, Ni 100
+50 ... +150°C	Pt 100, Ni 100
0 ... +200°C	Pt 100, Ni 100
0 ... +300°C	Pt 100 -
0 ... +400°C	Pt 100 -
0 ... +550°C	Pt 100 -
+200 ... +400°C	Pt 100 -
+300 ... +550°C	Pt 100 -

accuracy class 1.5 acc. to DIN EN 60 051 - 1

others

auxiliary voltage DC 24 V, $\pm 10\%$, approx. 40 mA
no electrical insulation or optionally
AC 230 V, $-15 \dots +10\%$, 48 ... 62 Hz
electrically insulated
(applying only PBQ 96/144, PB 144 PrS)

	PBQ 72	PBQ 96	PBQ 144
mounting depth	60 mm	62 mm	60 mm
weight approx.	0.3 kg	0.4 kg	0.7 kg
	PB 72 PrS	PB 96 PrS	PB 144 PrS
mounting depth	91 mm	100 mm	180 mm
weight approx.	0.2 kg	0.45 kg	0.7 kg

additional data

refer to Data Sheet No. 018.D.001.##



Short Form Data

Analog Panel Meters with Moving - Coil Movement for use with Thermocouples

PQ 72 RS
PQ 96 RS
PQ 144 RS
P 72 PrS
P 96 PrS
P 144 PrS



Functional Principle

pivot and jewel moving - coil movement, core - magnet system; thermoelectric voltage inputs as of 15 mV

Measuring Ranges

thermoelectric voltages exceeding 15 mV

for thermocouples acc. to DIN EN 60 584 - 1

measuring range	sensor	type	thermoelectric voltage
0 ... 400°C	Fe - CuNi	L	22.16 mV
0 ... 600°C	Fe - CuNi	L	33.67 mV
0 ... 800°C	Fe - CuNi	L	46.22 mV
0 ... 900°C	Fe - CuNi	L	53.14 mV
0 ... 400°C	Fe - CuNi	J	21.85 mV
0 ... 600°C	Fe - CuNi	J	33.10 mV
0 ... 800°C	Fe - CuNi	J	45.50 mV
0 ... 900°C	Fe - CuNi	J	51.88 mV
0 ... 600°C	NiCr - Ni	K	24.90 mV
0 ... 900°C	NiCr - Ni	K	37.33 mV
0 ... 1000°C	NiCr - Ni	K	41.27 mV
0 ... 1200°C	NiCr - Ni	K	48.83 mV
0 ... 1300°C	NiCr - Ni	K	52.40 mV
0 ... 1600°C	Pt10Rh - Pt	S	16.77 mV

accuracy class 1.5 acc. to DIN EN 60 051 - 1

others

	PQ 72 RS	PQ 96 RS	PQ 144 RS
mounting depth	60 mm	62 mm	60 mm
weight approx.	0.5 kg	0.6 kg	0.9 kg
	P 72 PrS	P 96 PrS	P 144 PrS
mounting depth	94 mm	107 mm	192 mm
weight approx.	0.5 kg	0.7 kg	1.3 kg

additional data

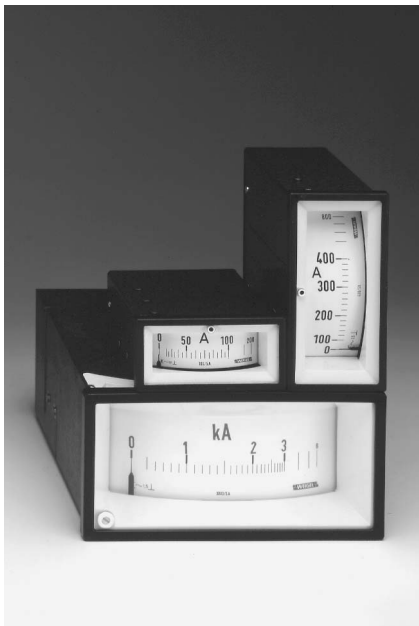
refer to Data Sheet No. 019.D.001.##



Short Form Data

Analog Panel Meters with Moving - Iron Movement Profile Types

W 72 PrS
W 96 PrS
W 144 PrS



Functional Principle

pivot and jewel moving-iron movement, silicon oil damped

Measuring Ranges

AC current 0 ... 100 / 200 mA up to 0 ... 25 / 50 A
(W 144 PrS up to 0 ... 15 / 30 A *) **)

for use on **CT** 0 ... N / 1 / 2 A or 0 ... N / 5 / 10 A *) **)

AC voltage 0 ... 6 V up to 0 ... 600 V

for use on **VT** 0 ... 100 / 120 V or 0 ... 110 / 132 V *)

*) scaling to DIN series with overload range
) as an option: no overload range

frequency range 16²/₃ ... 100 Hz or optionally calibrated
to a frequency between 100 to 1000 Hz

accuracy class 1.5 or optionally class 1.0

Others

	W 72 PrS	W 96 PrS	W 144 PrS
mounting depth	94 mm	107 mm	192 mm
weight approx.	0.28 kg	0.45 kg	1.0 kg

additional options

special measuring ranges, suppressed zero, expanded scale and others

additional data refer to Data Sheet No. 020.D.201.##

additional meters with moving-iron movements **EQ 48/72/96/144 K** (K-Series)
refer to Data Sheet No. 420.D.101.##
WSQ 48, WQ 72/96/144 RS (M-Series)
refer to Data Sheet No. 020.D.101.##

Weigel Meßgeräte GmbH

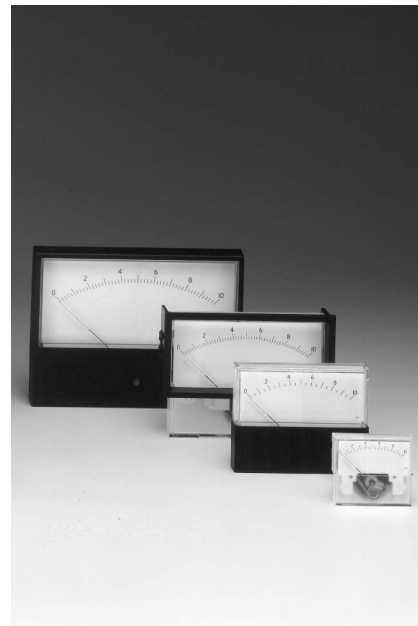
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Short Form Data

Rectangular Format Instruments

PRE



Functional Principle

Moving-coil DC movement; also AC rectified

data	on request

– specifications subject to change without notice; date of issue 06/11 –

