

SERIES M



Digits	4, 5, 6
Digit height	14mm
Color	Red Green
Reading	999999/-199999 99999/-99999 9999/-9999
Frontal	96x48mm
Mounting	Panel
Power	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
Output and control options	Relay outputs (1 to 6) Analog outputs MODBUS RTU RS-485 RS-232
Accessories	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units
Main features	Reading up to 5 meters Front keypad configuration Up to 3 output and control options Isolated circuits Protection IP54/IP65 Configurable brightness levels Advanced alarm management Function 'Fast Access' Function 'On power up' Max. and min. memory Function password Optional without front keypad Modular internal architecture Plug-in screw terminals High quality front lens
Main function / Input signal	For Process For Pt100/RTD and Thermocouples Counter, Ratemeter, Periodmeter AC Voltmeter and AC Ammeter DC Voltmeter and DC Ammeter AC Frequencymeter for AC power lines Chronometer, Time counter For Potentiometers For Modbus RTU protocol For RS-485 ASCII protocol For RS-232 ASCII protocol

The Series M of digital panel meters offers versatility and reliability in all type of industrial applications, offering a wide range of models, both for input signals and for output and control options, and accessories. The industry standard 14mm digit height provide an excellent reading for a distance of up to 5 meters. The joint use of 7 segment red leds with a specially adapted front lens, provides a sharp and clean reading.

The visual lines of the Series M stand for a clean and wide front space, where the main role is focused on the value displayed. The configuration keypad together with the units label and the logo, are located at the bottom, and do not visually interfere with the value displayed.



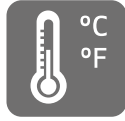


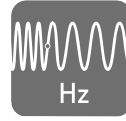
The Series M stands out for its security : all circuits are isolated between them, and excitation voltages are protected against short circuits. Internal components (such as leds, microcontrollers, push buttons, terminals, ...) are acquired to high reputation brands, it mounts plug-in screw terminals for safe connections, a housing specifically designed at FEMA, a patented panel fixation and front labeling units with high quality industrial adhesive.

The Series M internal architecture features a modular design providing flexibility to replace, add or change any of its internal modules to expand functionality as needed.




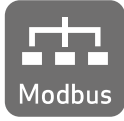


In short, the Series M is the standard series for all type of industrial applications. The wide range of input signals accepted, both analog and digital, the output and control modules available, and the accessories it features, allows for a high level of customization, fitting to all type of industrial needs.



MODELS






Model	M40-P	M50-P	M40-T	M40-A	M40-D	M60-F
Main function	PROCESS METER 	PROCESS METER 	TEMPERATURE METER 	AC VOLTMETER AC AMMETER 	DC VOLTMETER DC AMMETER 	AC FREQUENCYMETER FOR POWER LINES 
Ranges	0/10Vdc, 4/20mA, ±10Vdc,±20mA	0/10Vdc, 4/20mA, ±10Vdc,±20mA	Pt100/RTD (2 and 3 wires) Thermocouples J, K, T, E, S, R, N, C, L y X	600Vac, 100Vac, 10Vac, 1Vac, 100mVac, 5Aac, 1Aac	±600Vdc, ±100Vdc, ±10Vdc, ±1Vdc, ±100mVdc, ±5Adc,±1Adc	Frequencymeter up to 900KHz @500Vac
Digits	4	5	4	4	4	6
Reading	9999/-9999	99999/-99999	9999/-9999	9999/-9999	9999/-9999	999999/-199999
Digit height	14mm	14mm	14mm	14mm	14mm	14mm
Channels	1	1	1	1	1	1
Excitation voltage	5 to 20Vdc (max. 35mA)	5 to 20Vdc (max. 35mA)	---	---	---	---
Notes	---	---	---	TrueRMS measure CAT-II and CAT-III AC or AC+DC coupling	---	---
Total error	<0,05%	<0,03%	<0,2°C pt100 <2°C/<4°C thermocouples	<0,15% a <0,25%	<0,10% a <0,15%	<0,05%
Thermal drift	10ppm/°C (offset) 25ppm/°C (offset+span)	10ppm/°C (offset) 25ppm/°C (offset+span)	0,05°C/°C a 0,02°C/°C (offset) 0,02°C/°C a 0,2°C/°C (offset+span)	<75 a <150ppm/°C (offset) <100 a <200ppm/°C (offset+span)	50ppm/°C (offset) 100ppm/°C (offset+span)	20ppm/°C
Step response	<120mSec.	<300mSec.	---	<300mSec.	<210mSec.	---
Acquisitions	15/second	3,5/second	3/second	15/second	15/second	---
Power	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
Consumption	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)
Isolation	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)
Protection	IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65
Output and control options	Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3
Particular functions of this model	Scalable reading 20 segment linearization Display filters Function 'Measure' Function 'Field correction' Function 'Tare' Alarms	Scalable reading 20 segment linearization Display filters Function 'Measure' Function 'Field correction' Function 'Tare' Alarms	Automatic and configurable cold junction compensation Reading in °C or °F Manual offset for Pt100/RTD Pt100/RTD resolution selectable 1°C or 0,1°C	Scalable reading Display filters Function 'Measure' Function 'Field correction' Alarms	Scalable reading Display filters Function 'Measure' Function 'Field correction' Alarms	Scalable reading Alarms
Common functions	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password
Labeling units	Includes units label Units1	Includes units label Units1	Includes units label Units3	Includes units label Units2	Includes units label Units2	Includes units label Units4
Configuration	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Mounting	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)
Weight	<150gr	<150gr	<150gr	<150gr	<150gr	<150gr
Depth	91mm	91mm	91mm	91mm	91mm	91mm

MODELS AND REFERENCES SERIES M




M60-C1	M60-CR	M40-R	M60-RTU	M60-485	M60-232
COUNTER, RATEMETER, PERIODMETER	CHRONOMETER, TIME COUNTER	POTENTIOMETRIC METER	MODBUS RTU REPEATER	RS-485 ASCII REPEATER	RS-232 ASCII REPEATER
					
Impulse counter up to 250KHz Ratemeter up to 900KHz Periodmeter up to 1000sec.	Hours, minutes, seconds, tenths and cents of second Hour or decimal format	Pot<5K, Pot<5M, passive mode	Protocol Modbus RTU	Protocol RS-485 ASCII	Protocol RS-232 ASCII
6	6	4	6	6	6
999999/-199999	999999/-199999	9999/-9999	999999/-199999	999999/-199999	999999/-199999
14mm	14mm	14mm	14mm	14mm	14mm
1	1	1	1	1	1
5 to 18Vdc (max. 70mA)	5 to 18Vdc (max. 70mA)	+5Vdc	---	---	---
Highly configurable Accepts all type of sensors (NPN, PNP, ...) Accepts quadrature signals Front and/or rear reset	Independent start, stop and reset controls Highly configurable Up and down counting Front and/or rear reset Memory in case of power loss Accepts all type of controls (NPN, PNP, ...)	---	---	---	---
---	<0,01%	<0,15%	---	---	---
---	20ppm/°C	10ppm/°C(offset) 35ppm/°C (offset+span)	---	---	---
---	---	<200mSec.	---	---	---
---	---	5/second	---	---	---
H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)	<1,5W (meter only) <4,0W (with options)
2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)
IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65	IP54/IP65
Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3
8 selectable working modes (inhibit, subtract, quadrature, ...) Scalable reading (multiplier and divider) Configurable preset Special 'Fast' counter mode Special 'Slow' ratemeter mode Function 'Trigger Sense' Function 'On alarm'	12 reading formats (hour / decimal). Time cycles, accumulated time, hold, ... Up and down counting Preset Special control functions Configurable trigger level Repeatable cycles of counting	Scalable reading 20 segment linearization Display filters Function 'Measure' Function 'Field correction' Function 'Tare' Alarms	'Slave' or 'Process' modes Function 'Watchdog' Configurable 16 bits or 32 bits registers Function 'Bus Activity'	'Slave', 'Process' or 'Text' modes Function 'Watchdog' Function 'Bus Activity'	'Slave', 'Process' or 'Text' modes Function 'Watchdog' Function 'Bus Activity'
Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password
Includes units label Units5	Includes units label Units6	Includes units label Units1	Includes units label Units1	Includes units label Units1	Includes units label Units1
From front keypad	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)	Panel (optional wall mount and DIN rail)
<150gr	<150gr	<150gr	<150gr	<150gr	<150gr
91mm	91mm	91mm	91mm	91mm	91mm






OUTPUT AND CONTROL OPTIONS




Option	R1	AO	RTU	S4	S2
Main function	1 RELAY OUTPUT 	1 ANALOG OUTPUT 	1 MODBUS RTU 	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	Output in 4/20mA, 0/10Vdc	Up to 38.400bps	Up to 38.400bps	Up to 38.400bps
Isolation	Yes, 3500Veff	Yes, 1000Vdc	Yes, 1000Vdc	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1, 2 or 3	1, 2 or 3	1, 2 or 3	1, 2 or 3	1, 2 or 3
Installable at	Option 1, 2 and 3	Option 1, 2 and 3	Option 1, 2 and 3	Option 1, 2 and 3	Option 1, 2 and 3
Notes	For 2 (or 3) relay outputs, reference R1-R1 (or R1-R1-R1).	Output signal configurable for active and passive. Direct and inverse slope.			







SPECIAL OPTIONS

Option	R2	R4	R6
Main function	2 RELAY OUTPUTS 	4 RELAY OUTPUTS 	6 RELAY OUTPUTS 
Characteristics	3 terminals (NC, NO, common) 250Vac, Maximum 6A	3 terminals (NC, NO, common) 250Vac, Maximum 6A	3 terminals (NC, NO, common) 250Vac, Maximum 6A
Isolation	Yes, 2500Veff	Yes, 2500Veff	Yes, 2500Veff
Maximum number of options installable	1	1	1
Installable at	Option 1	Option 1	Option 1
Notes	This special option is not compatible with other options R1, R2, R4 or R6. Installs at Option 1 and leaves free options 2 and 3.	This special option is not compatible with other options R1, R2, R4 or R6. Installs at Option 1 and 2 and leaves free Option 3.	This special option is not compatible with other options R1, R2, R4 or R6. Installs at Option 1, 2 and 3.

OTHER OPTIONS

Option	65	NBT	G
Main function	FRONT IP65 	WITHOUT FRONT KEYPAD 	GREEN DIGITS 
Characteristics			
Isolation			
Maximum number of options installable			
Installable at			
Notes	The Front IP65 blocks access to internal modules. Internal modules can not be added or replaced without breaking the Front IP65 protection seal.	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.	

Option	DRA-M	KA96	THM	KIP	WME
Main function	DIN RAIL ADAPTER 	ADAPTER 96x96mm 	BENCHTOP HOUSING 	IP65 FRONT COVER 	WALL MOUNT HOUSING 
Notes	Adapter for DIN rail mounting. For panel meters with front size 96x48mm.	Adapter for 96x96mm front size. For panel meters with front size 96x48mm.	Benchtop housing. For panel meters with front size 96x48mm.	Removable front cover that provides IP65 protection. For panel meters with front size 96x48mm. Allows access to the front of the instrument.	Wall mount housing. For panel meters with front size 96x48mm. Together with KIP front cover, it provides full IP65 protection.

Option	LABEL UNITS1	LABEL UNITS2	LABEL UNITS3	LABEL UNITS4	LABEL UNITS5	LABEL UNITS6
Main function	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 
Notes	Labeling with printed units "Vdc", "mA", "%", "mm", "RPM", "m/min", "BAR", "°C" and "°".	Labeling with printed units "Vdc", "Vac", "Adc", "Aac", "mVdc", "mVac", "mAdc", "mAac" and "°".	Labeling with printed units "°C", "°F" and "°".	Labeling with printed units "mHz", "Hz", "KHz", "mSec", "Sec", "min", "Units", "RPM" and "°".	Labeling with printed units "mm", "cm", "m", "l", "m3", "RPM", "m/min", "Units" and "°".	Labeling with printed units "hrs", "min", "sec", "cent", "days", "time" and "°".

How to order

Model	Power	Option1	Option2	Option3	Others	
M60	C1	H	---	---	---	
M60	- P	- H (85-265Vac/dc)	- R1 (1 relay)	- R1 (1 relay)	- R1 (1 relay)	- 65 (IP65)
M50	- T	- L (11-60Vdc and 24/48Vac)	- AO (Analog output)	- AO (Analog output)	- AO (Analog output)	- NBT (without front keypad)
M40	- A		- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	- G (Green digits)
	- D		- S4 (RS-485)	- S4 (RS-485)	- S4 (RS-485)	- (empty)
	- R		- S2 (RS-232)	- S2 (RS-232)	- S2 (RS-232)	- (empty)
	- F		- (empty)	- (empty)	- (empty)	- (empty)
	- C1	- R2*				
	- CR	- R4*				
	- RTU	- R6*				
	- 485					
	- 232					

Note: Maximum 3 "Output and control options" on the instrument. Accepts all combinations and/or repetition of "Output and control options", unless otherwise indicated.

* Special options

- Module R2 2 relays Installed at Option 1
- Module R4 4 relays Installed at Option 1 and 2
- Module R6 6 relays Installed at Option 1, 2 and 3

For relay outputs, use options 'R1' as standard for 1, 2 and 3 relay outputs. Use "Special options" R2, R4 or R6 when modules R1 can not fill the requested application. Example: instrument with 3 relays and 1 Analog output, use 1xR4 and 1xAO (M40-P-H-R4-AO).

