

M60-C1 Impulse counter, Ratemeter

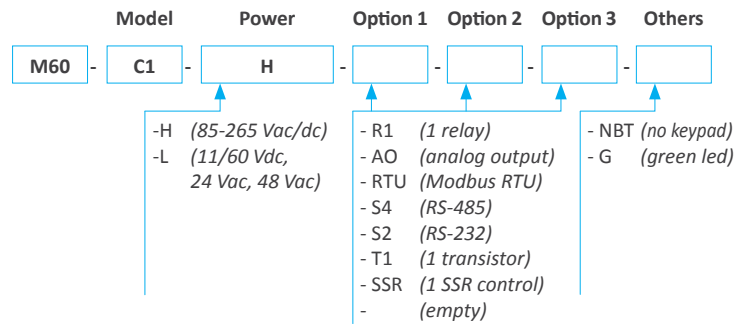
Impulse counter, ratemeter and periodmeter. Reading at 6 digits with 14 mm digit height. Standard 96 x 48 mm (1/8 DIN) size, for panel mount. Accepts all type of impulse signals and encoders. Provides excitation voltage for the sensor. Universal high and low AC and DC power options. Optional output modules with relay, transistor, SSR control, analog outputs and MODBUS RTU communication.



Technical specifications

Digits	6
Reading	999999 / -199999
Decimal point	configurable
Led color	red or green
Digit height	14 mm
Signals accepted	NPN, PNP, Namur, pick-up, TTL, inductive, mechanical, quadrature, ...
Excitation voltage	+5 Vdc, +9 Vdc, +15 Vdc, +18 Vdc (max. 70 mA)
Maximum Vdc at input terminals	±30 Vdc
Quartz accuracy	±0.01 %
Thermal stability	20 ppm/°C
Display refresh	15 refresh / second
Maximum frequencies	counter up to 250 KHz ratemeter and periodmeter up to 500 KHz
Minimum frequencies	ratemeter and periodmeter down to 1 mHz (0.001 Hz)
Power 'H'	85 to 265 Vac/dc (isolated 2500 Veff)
Power 'L'	11 to 60 Vdc and 24/48 Vac (isolated 1500 Veff)
Retransmission and control options	relays, analog output, serial communications, ...
Consumption	<1.5 W (meter only) <4.0 W (meter with options)
Front protection	IP65
Connections	plug-in screw terminal
Weight	<150 grams
Mounting	panel
Front size	96 x 48 mm
Panel cut-out	92 x 44 mm
Deep	91 mm (including terminals)
Operating temperature	0 to 50 °C

Order reference

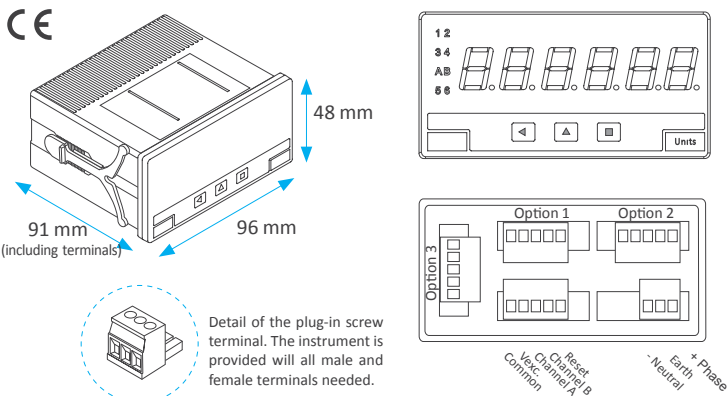


* Relays R1 with contacts (NC / NO / Common), max. 250 Vac 8 A
* Special options with 4 and 6 relays.
* Analog outputs and serial outputs, isolated.

Functions included

- 'Fast access' menu a single press on the front keypad gives access to alarm setpoint modification, preset, memories, ...
- Function 'SLOW' special mode for low frequency ratemeter applications
- Function 'FAST' special mode for high frequency counter applications
- Scaling factor multiplier and divider from 1 to 999999
- Configurable reset. front and rear reset, and reset linked to alarm activation
- Preset. configurable
- Trigger level. configurable
- Function 'Trigger Sense' help on setting the correct trigger level
- Sensor selection by menu
- Cycle counter count of cycles defined by the 'on alarm reset' function
- Retention memory. recovers the counting value in case of power loss
- 'On power-up' function protects remote systems by delaying the output and control signals at cold start-up.
- Alarms with one or two setpoints, independent activation and deactivation delays, hysteresis, optional manual deactivation of the relay.
- Inverted relay for security applications
- Display filters. recursive filters for unstable signals
- Brightness 5 levels of brightness intensity.
- Password blocks access to configuration menu.

Dimensions and connections



Output and control options

Model	Power	Option 1	Option 2	Option 3	Others
M60	C1				
Function	Installable options	Isolated			
R1	1 relay output	3	yes		
T1	1 transistor output	3	yes		
SSR	1 control for SSR relay	3	yes		
AO	1 analog output	3	yes		
RTU	1 Modbus RTU port	3	yes		
S4	1 RS-485 port	3	yes		
S2	1 RS-232 port	3	yes		
R2, R4, R6	special modules up to 6 relay outputs. Check for information.				

Other options

Option NBT



Without front keypad

Option G



Green leds

Accessories

WME



Wall mount

DRA



DIN rail mount

THM



Benchtop housing

KIP



Protector IP65

KA96



Adapter 96 x 96 mm

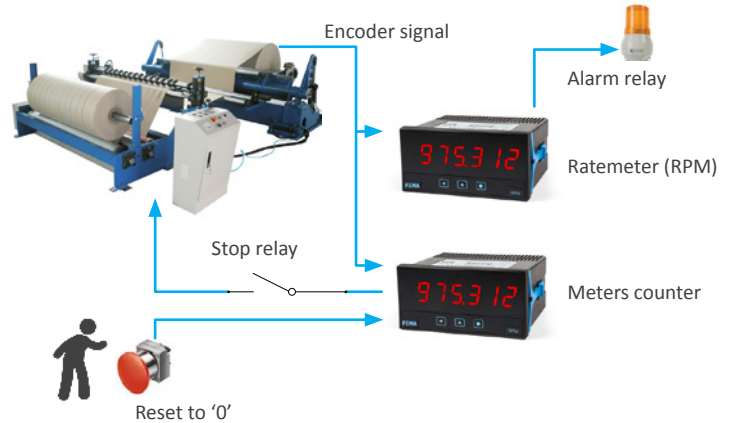
Additional documentation

M60-C1 user's manual
M60-C1 datasheet
Options user's manual

www.fema.es/docs/2975_M60-C1_manual_en.pdf
www.fema.es/docs/3186_M60-C1_datasheet_en.pdf
www.fema.es/docs/4254_SERIES_M-K-S_OPTIONS_manual_en.pdf

Application example

Reading of total processed meters on a paper mill. Signal received from a built-in bidirectional encoder at the roller. Operator has a manual reset control to set the counter to '0' at start. A relay output stops the mill when the total desired meters has been reached. A second meter, configured as ratemeter, reads the actual RPM speed of the roller. A relay output controls an alarm signal in case of excessive speed.



Reading distances

Digit height (mm)	10	14	20	60	100
Reading distance	4 m	5 m	8 m	20 m	40 m
Series	L	M,S	K	B2x	B4x

Other Counters and Ratemeters

Series M

4, 5 and 6 digits

digit height 14 mm
color red, green
vision 5 meters
size 96 x 48 mm

DIGITAL PANEL METER
SERIES M
Full Signal Ranges Available



Series K

Further view

digit height 20 mm
color red
vision 8 meters
size 96 x 48 mm

DIGITAL PANEL METERS
SERIES K
20 mm Digit Size



Series S

Compact size

digit height 14 mm
color red, green
vision 5 meters
size 72 x 36 mm

DIGITAL PANEL METERS
SERIES S
Compact Size 72x36 mm

