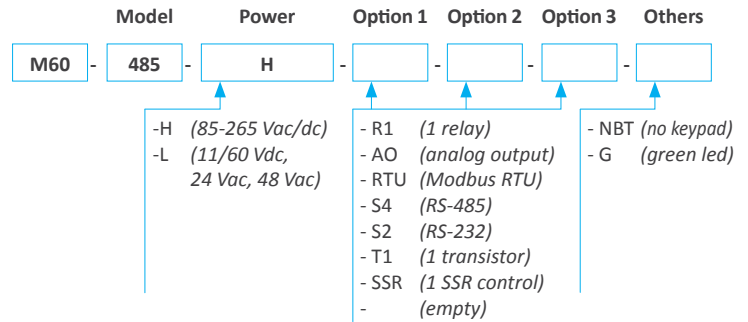# M60-485 Display for RS-485 ASCII

Digital display for ASCII code repeater, on RS-485 bus, with 6 digits and 14 mm digit height in red or green color. Standard 96 x 48 mm (1/8 DIN) size, for panel mount. Three working modes allows for local or remote control of alarms and data treated as numerical values or ASCII values. Reading range from 999999 to -199999. Decimal point. 'Watchdog' function, 'Bus activity' function, 'Fast access' menu, 'On power up' function. Universal high and low AC and DC power options. Optional output modules with relay, transistor, SSR control and analog outputs.

RS-485

Technical specifications

Digits	6
Reading	999999 / -199999
Decimal point	X.X.X.X.X.X
Led color	red or green
Digit height	14 mm
Protocol	ASCII
Bus	RS-485
Function	ASCII code repeater
Speed	from 38.400 bps to 600 bps (19.200 bps by default)
Data format	8n1, 8e1, 8o1, 8n2
Address	1 to 31
Bus terminators	not included
Watchdog	configurable from 1 to 120 seconds
Working modes	'Process slave' for local control of alarms
	'Full slave' for remote control of alarms
	'Text' to work with ASCII characters
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 ºC

Dimensions and connections

CE

91 mm
(including terminals)

96 mm

48 mm

Detail of the plug-in screw terminal. The instrument is provided will all male and female terminals needed.

Option 1   Option 2

Option 3

GND   A   B   - Neutral   + Phase   Earth

Units

Order reference

	Model	Power	Option 1	Option 2	Option 3	Others
M60 -	485 -	H -		-	-	-

-H (85-265 Vac/dc)
-L (11/60 Vdc, 24 Vac, 48 Vac)

- R1 (1 relay)
- AO (analog output)
- RTU (Modbus RTU)
- S4 (RS-485)
- S2 (RS-232)
- T1 (1 transistor)
- SSR (1 SSR control)
- (empty)

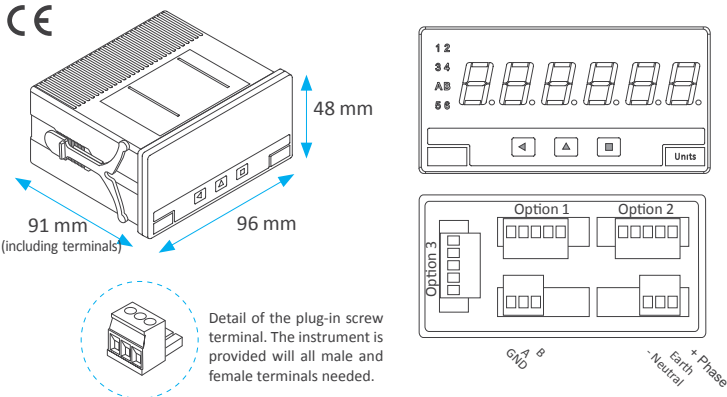- NBT (no keypad)
- G (green led)

* 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

'Process slave'	in 'Process slave' mode, alarms are configured locally and are associated to the display value
'Full slave'	in 'Full slave' mode alarms activate or deactivate writing on alarm registers.
'Text'	in 'Text' mode, ASCII characters received are not translated to number, but are directly displayed as 7 segment characters.
'**Watchdog**' function.	generates error after predefined time without communication with the master. Alarm can be linked to the watchdog function.
'**Bus activity**' function	detects electrical activity on the bus. Useful for troubleshooting.
'**Fast access**' menu	specific menu entries can be associated to key UP ('▲'), such as display address, or alarm setpoints.
'**On power-up**' function	configurable delay at start-up, and configurable state of alarms at start-up.
Brightness	5 levels of brightness intensity.
Password	blocks access to configuration menu.

45 YEARS 1969-2014

Q ISO 9001 Certified Quality

CE EN-61010-1 Security

CE EN-61326-1 Electromagnetic C.

5 YEARS Extended Warranty

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FEMA ELECTRÓNICA

Output and control options

Model	Power		Option 1	Option 2	Option 3	Others
M60	485	-	-	-	-	

	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

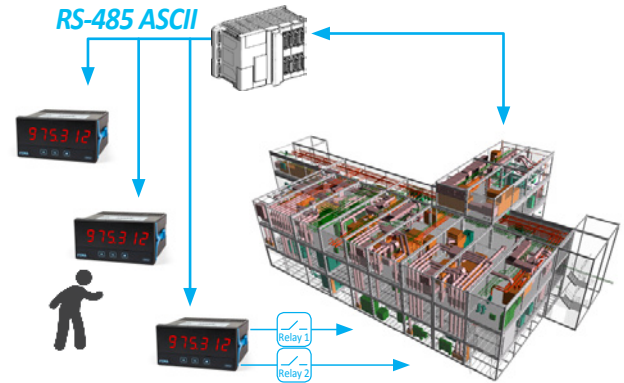Benchtop housing

KIP

Protector IP65

KA96

Adapter 96 x 96 mm

Additional documentation

M60-485 user's manual — www.fema.es/docs/3776_M60-485_manual_en.pdf
M60-485 datasheet — www.fema.es/docs/3798_M60-485_datasheet_en.pdf
Options user's manual — www.fema.es/docs/4254_SERIES_M-K-S_OPTIONS_manual_en.pdf

Application example

Factory signals are concentrated into a PLC who receives and manages factory processes. Critical information can be numerically communicated to local operators via RS-485 ASCII code repeaters M60-485. Local displayed values are of valuable help to the operator, who can review in a single and fast visual check the main critical parameters of the system.

RS-485 ASCII

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 RS-485 repeaters

Series M
4, 5 and 6 digits
digit height ...... 14 mm
color .... red, green
vision .... 5 meters
size .... 96 x 48 mm

Series K
Further view
digit height ...... 20 mm
color .... red
vision .... 8 meters
size .... 96 x 48 mm

Series S
Compact size
digit height ...... 14 mm
color .... red, green
vision .... 5 meters
size .... 72 x 36 mm

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