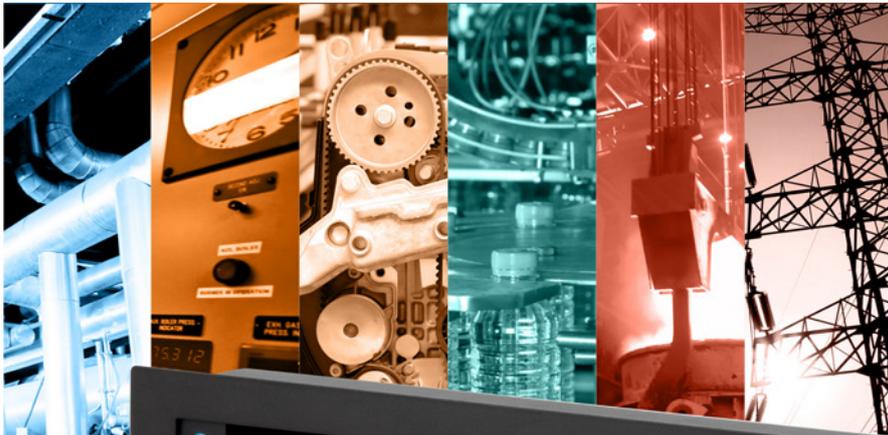


FEMA

MANUFACTURING
FOR INDUSTRIAL
AUTOMATION



50 YEARS	CE
1969-2019	CE Product

Q Quality	5 YEARS	UL US
ISO9001	Extended Warranty	UL LISTED

DIGITAL PANEL METERS
LARGE FORMAT METERS
ISOLATORS & SIGNAL CONVERTERS

Catalog

2022-2023



ABOUT FEMA

FEMA starts its activity in **1969** with the objective to provide to national and international companies with quality instrumentation in the process automation field. At FEMA **we develop and manufacture instrumentation for industrial automation**, and we are focused in the following items :

- the **quality on the signal acquisition**, meaning both accuracy and stability in the measure
- **isolation** between circuits, meaning security for the operator and security for remote instrumentation
- **wide range of signals accepted**, our product catalog covers from process and temperatures, to AC and DC voltages, currents, frequency signals, impulse counters, ratemeters, ... and much more.

The **reliability and the strength** of our instruments allow us to export our products around the world, through an extensive network of sales partners and associated customers.

At **FEMA** we support **constant research and innovation**. Our headquarters are located in the european capital of innovation: Barcelona. From our facilities with more than 900 m² **we design, manufacture and verify all the instrumentation present in our catalog**. All our processes follow strict quality control procedures and nowadays **more than 60% of our production is being exported** to international customers.

We have been working for **more than 50 years** in products and services that are highly valued by our customers. During this time we have been recognized by our national and international customers with their confidence and trust, but also by external organizations, achieving our first **Official ISO9001 Certificate back in 1999**, for achieving the maximum quality in all the processes of our company, or the **Best Export Award from the Chamber of Industry and Trade of Sabadell**, back in 1993.



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OUR PRODUCTS

Each verification procedure, each isolation test and each component mounted in our instruments, are applied with a firm conviction that they are warranty of a strong and reliable instrument. Our quality control and product development processes are focused on putting up a product that is strong, trustworthy and easy to use.

We introduce you our main Product Families:

- **Digital Panel Meters**

Section Industrial Applications

Series M, K, S and B

Section OEM

Series C, EC4, V and L35

Section Special Instruments

UL Listed , Loop powered, EM60-TH, BAR meters and BCD code

- **Isolated Signal Converters and Duplicators:**

Section Industrial Applications

Series I4

Section OEM Industrial

Series I3 and CCT-100

Section Special Instruments

Series CCT-55



Digital Meters



Isolated Signal Converters

OUR SIGNALS

The electrical signal is our starting point. Voltages, currents, resistances ... our instruments receive **Electrical Signals**, and from that point, we apply our **know-how** in the fields of acquisition, linearization, signal processing and retransmission. Find below the icons that we use to represent each type of signal.



Process signals



Temperature signals (Pt100, thermocouples, Ntc, ...)



Impulse counters



Ratemeters



Periodmeters



Chronometers



Potentiometers



Resistances



AC/DC voltages and currents



AC frequency signals



Integrators



Flow signals



Weight - Load cell signals



Parallel BCD



Modbus RTU repeater



RS-485 / RS-232 ASCII repeater

OUR CUSTOMERS

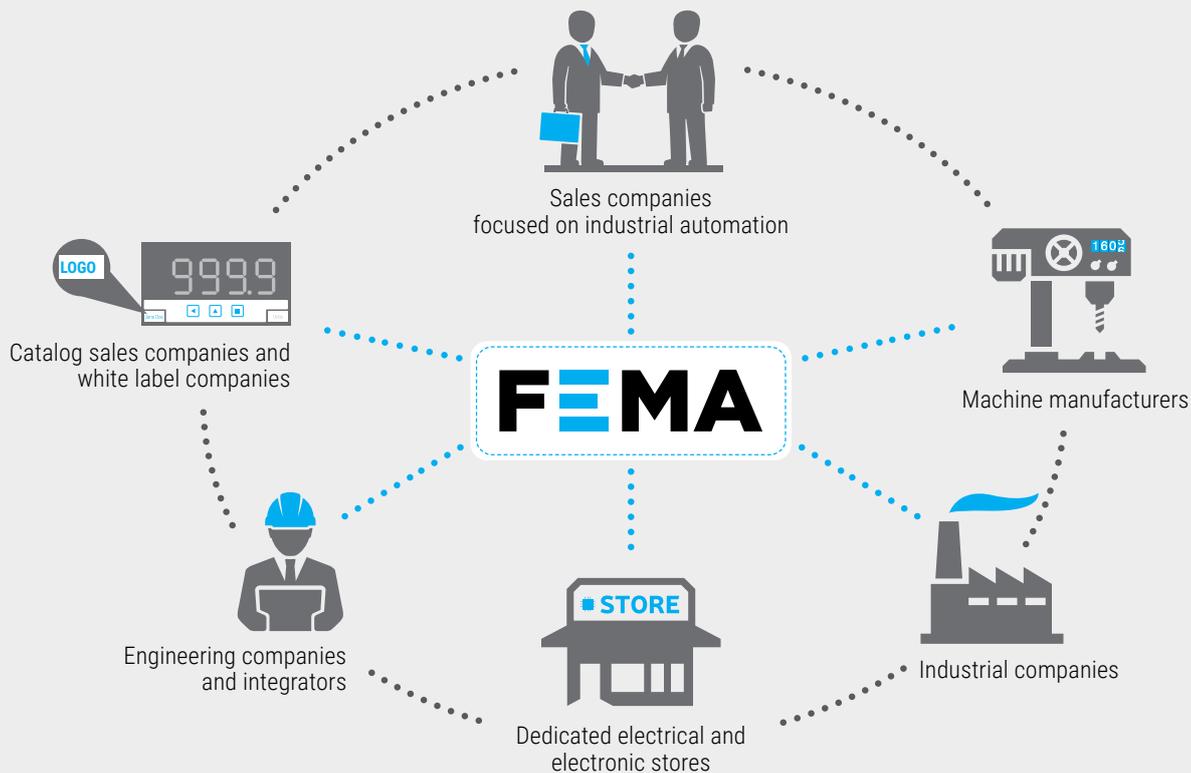
We serve to **top industrial companies** with the best solutions in instrumentation, and we help them to identify the instrument that best suit their needs.

- We offer a **wide catalog of industrial instrumentation** for signal reading, conversion and isolation
- We can **customize our instruments** previous to delivery
- We manufacture **specific instruments based on your requirements**
- We **ship to your facilities or to the address provided**

We are committed to our customers. We offer our **assistance in all the stages** of the project, from the identification of the product that best suit your requirements, to the customizing of specific functions, together with recommendations for installation and use.

We have a diverse customer profile, but that they all have something in common: they are **demanding professionals**.

- Industrial companies
- Machine manufacturers
- Engineering companies and integrators
- Catalog sales companies and white label companies
- Sales companies focused at industrial automation
- Dedicated electrical and electronic stores



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DIGITAL PANEL METERS

ISOLATED SIGNAL CONVERTERS

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20mm (digit height)		60mm (digit height)				100mm (digit height)			
4 Digits		4 Digits		6 Digits		4 Digits		6 Digits	
Front size 96x48mm		Front size 340x135mm		Front size 436x135mm		Front size 542x166mm		Front size 740x166mm	
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SELECTOR TABLE DIGITAL PANEL METERS

Section Industrial				
Model	SERIES M	SERIES K	SERIES S	SERIES B
				
Digits	4, 5, 6	4	4	4, 6
Digit height	14mm	20mm	14mm	60mm 100mm
Color	Red Green	Red	Red Green	Red Green
Reading	999999/-199999 99999/-99999 9999/-9999	9999/-1999	9999/-1999	999999/-199999 9999/-1999
Frontal	96x48mm	96x48mm	72x36mm	340x135 mm 436x135 mm 542x166 mm 740x166 mm
Mounting	Panel (optional wall mount, DIN rail)	Panel (optional wall mount, DIN rail)	Panel	Panel (optional wall mount)
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 and 120-370Vdc) L (11-36Vdc)
Output and control options	Relay outputs (1 to 6) Transistor outputs (1 to 3) Control for SSR relays (1 to 3) Analog outputs MODBUS RTU RS-485 RS-232	Relay outputs (1 to 6) Transistor outputs (1 to 3) Control for SSR relays (1 to 3) Analog outputs MODBUS RTU RS-485 RS-232	Relay outputs (1 to 4) Transistor outputs (1 to 2) Control for SSR relays (1 to 2) Analog outputs MODBUS RTU RS-485 RS-232	Relay outputs (1 to 3) Transistor outputs (1 to 3) Control for SSR relays (1 to 3) Analog outputs MODBUS RTU RS-485 RS-232
Accessories	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units	Adapter 72x72mm Labeling units	Remote keypad Panel junction protection
Main features	Reading up to 5 meters Front keypad configuration Up to 3 output and control options Isolated circuits Protection front 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	Reading up to 8 meters Front keypad configuration Up to 3 output and control options Isolated circuits Protection front 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	Reading up to 5 meters Front keypad configuration Up to 2 output and control options Isolated circuits Protection IP54 Configurable brightness levels Advanced alarm management Function 'Fast Access' Function 'On power up' Max. and min. memory Function password Modular internal architecture Plug-in screw terminals High quality front lens	Reading up to 25 meters and 50 meters Sturdy metallic IP65 housing Front keypad configuration Panel, wall and hanging mount Configurable brightness levels Up to 3 output and control options Isolated circuits Advanced alarm management Function 'Fast Access' Function 'On power up' Max. and min. memory Function password Modular internal architecture
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 Weight - Load cells For Potentiometers Modbus RTU repeater RS-485 ASCII, RS-232 ASCII repeater	For Process For Pt100/RTD and Thermocouples Counter, Ratemeter, Periodmeter AC Voltmeter and AC Ammeter DC Voltmeter and DC Ammeter Chronometer, Time counter Weight - Load cells For Potentiometers Modbus RTU repeater RS-485 ASCII, RS-232 ASCII repeater	For Process For Pt100/RTD and Thermocouples Counter, Ratemeter, Periodmeter AC Voltmeter and AC Ammeter DC Voltmeter and DC Ammeter Chronometer, Time counter Weight - Load cells For Potentiometers Modbus RTU repeater RS-485 ASCII, RS-232 ASCII repeater	For Process For Pt100/RTD and Thermocouples Counter, Ratemeter, Periodmeter Chronometer, Time counter Weight - Load cells For Potentiometers Modbus RTU repeater RS-485 ASCII, RS-232 ASCII repeater

NEW!

2021

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2021

Section OEM

Section Special

SERIES C	SERIES EC4	SERIES V	INST. L35	SERIES BAR	SERIES UL	SERIES LP4	EM60-TH
							
4, 6	4	4	3 1/2	Bar led	4	4	6
14mm	14mm	14mm	10mm	30 segments	14mm	14mm	14mm
Red	Red	Red	Red	Red	Red	Red	Red
9999/-1999 99999/-199999	9999/-1999	9999/-1999	1999/-1999	0/100% horizontal 0/100% vertical	9999/-1999	9999/-1999	999999/-199999 RPM 99.23.59 days or 99.59.59 hours
96x48mm	96x48mm	72x36mm	48x24mm	96x48mm 96x24mm	96x48mm	96x48mm	96x48mm
Panel	Panel	Panel	Panel	Panel	Panel	Panel	Panel
U (18-265Vac/dc)	U (18-265Vac/dc)	U (18-265Vac/dc)	10-30 Vdc	U (18-265Vac/dc) 24Vdc	U (18-265Vac/dc)	loop powered	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
Relay outputs (1 to 2) Analog output Modbus RTU	Relay outputs 4 (SPST) Analog output 1	---	---	Relay outputs (1 to 2) Analog output	Relay outputs (1 to 2) Analog output Modbus RTU	---	Salidas relé 2 (SPDT)
Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units	Adapter 72x72mm	---	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm Labeling units	---	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm	Wall mount DIN rail mount Benchtop housing Adapter 96x96mm
Section OEM Reading up to 5 meters Front keypad configuration Relay, analog, serial outputs Isolated circuits Protection IP50/IP65 Function 'Fast Access' Function 'ECO' Function 'External control' Function 'Second scaling' Function 'Tare' Function password Optional without front keypad Modular internal architecture Plug-in screw terminals	Section OEM 'Full equip' instrument with 4 SPST relays and 1 isolated analog output 4/20mA included as a standard. Front keypad configuration Isolated circuits Protection IP65 Function 'Fast Access' Function 'ECO' Function 'External control' Function 'Second scaling' Function 'Tare' Function password Function password Plug-in screw terminals	Section OEM Reading up to 5 meters Configuration keypad hidden behind the front filter Isolated circuits Protection IP52 Function 'ECO' Function 'External control' Function 'Second scaling' Function 'Tare' Function password Plug-in screw terminals Antirreflexive front lens	Section OEM Reading up to 4 meters Potentiometer based adjustment Plug-in screw terminals Antirreflexive front lens Isolated circuits	Section Special Bar led reading Reading up to 5 meters Front keypad configuration Relay and analog outputs Isolated circuits Front protection IP65 Function 'Fast Access' Function password Modular internal architecture Plug-in screw terminals	UL listed Reading up to 5 meters Front keypad configuration Relay, analog, serial outputs Isolated circuits Protection IP50/IP65 Function 'Fast Access' Function 'ECO' Function 'External control' Function 'Second scaling' Function 'Tare' Function password Optional without front keypad Modular internal architecture Plug-in screw terminals	Section Special 4/20mA Loop powered Front keypad configuration Protection front IP50 or IP65 Isolated circuits View up to 5 meters	Section Special Impulse signals(NPN, PNP, ...) for RPM reading Internal time counter with alarm to manage preventive maintenances. Front keypad configuration Protection IP65 Isolated circuits View up to 5 meters
For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples AC Voltmeter up to 600Vac DC Voltmeter up to ±600Vdc AC Frequencymeter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ±5Adc For Resistances For Potentiometers For flow sensors	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples AC Voltmeter up to 600Vac DC Voltmeter up to ±600Vdc AC Frequencymeter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ±5Adc For Resistances For Potentiometers	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples AC Voltmeter up to 600Vac DC Voltmeter up to ±600Vdc AC Frequencymeter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ±5Adc For Resistances For Potentiometers	For Process and Vdc	For Process For Potentiometers	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples AC Voltmeter up to 600Vac DC Voltmeter up to ±600Vdc AC Frequencymeter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ±5Adc For Resistances For Potentiometers	For Process	NPN and PNP with 2 and 3 wires Includes excitation voltage 2 relay outputs to signal excessive speed and / or maintenance time reached

SELECTOR TABLE ISOLATORS AND CONVERTERS

	Section Industrial		Section OEM	
	SERIES I4		SERIES I3	SERIES CCT-100
Model	 			
Main function	Signal converter Signal isolator		Signal converter Signal isolator Signal duplicator	Signal isolator loop powered
Output signal	4/20mA, 0/10Vdc and others		4/20mA, 0/10Vdc	Equal to input signal
Mounting	DIN rail		DIN rail	DIN rail
Power	U (18-265Vac/dc)		U (18-265Vac/dc)	Loop powered
Main features	Instrument multisignal for process, temperatures, resistances, potentiometers, electrical AC and DC voltages and currents and load cells. Isolated circuits, 3 way isolation Configuration menu and pre configured codes Front key pad for configuration		Multisignal instrument for process, temperatures, resistances and potentiometers Isolated input-output-power Easy configuration with codes Configuration system hidden behind the front cover	Section OEM Isolator Loop powered from the input loop No configuration needed Output signal equal to input signal
Models	for process for temperatures Pt100, Pt500, .. for temperatures NTC for temperatures thermocouples for voltages AC and DC for currents AC and DC for power frequency for load cells for millivolts		for process for temperatures Pt100, Pt500, Pt100 for thermocouples J, K, N, E, T, R, S for temperatures Ni100, Ni1000 for temperatures NTC for potentiometers for resistances	for process in mA

Section Special

SERIES CCT-55



Process to frequency converter

Frequency

DIN rail

0 (230Vac)

1 (115Vac)

6 (24Vdc)

Frequency output

Input in mA or Vdc

Isolated circuits, 3 way isolation

High isolation levels

For Process in mA and Vdc



DIGITAL PANEL METERS SECTION INDUSTRIAL

GENERAL INDUSTRIAL APPLICATIONS



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) Transistor outputs (1 to 3) SSR control outputs (1 to 3) 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 front 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 Weight - Load cells For Potentiometers Repeater for Modbus RTU Repeater for RS-485, RS-232

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	M60-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, and potentiometers	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	6	4	4	4	6
Reading	9999/-9999	999999/-199999	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	IP65 front	IP65 front	IP65 front	IP65 front	IP65 front	IP65 front
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 32 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 Units7	Includes units label Units7	Includes units label Units7	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	M60-LC	M40-R	M60-RTU	M60-485
COUNTER, RATEMETER, PERIODMETER	CHRONOMETER, TIME COUNTER	WEIGHT LOAD CELLS	POTENTIOMETRIC METER	MODBUS RTU REPEATER	RS-485 ASCII REPEATER
					
Impulse counter up to 250KHz Ratemeter up to 500KHz Periodmeter up to 1000sec.	Hours, minutes, seconds, tenths and cents of second Hour or decimal format	1mV/V, 2mV/V, 3mV/V and others signals up to 100mV	Pot<5K, Pot<5M, passive mode	Protocol Modbus RTU	Protocol RS-485 ASCII
6	6	6	4	6	6
999999/-199999	999999/-199999	999999/-199999	9999/-9999	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)	5 or 10Vdc (max. 140mA)	+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, ...)	Alarms standard or by stability Configurable acquisitions per second Noise rejection to 50 and 60Hz.	---	---	---
---	<0,01%	<0,05%	<0,15%	---	---
---	20ppm/°C	50ppm/°C	10ppm/°C(offset) 35ppm/°C (offset+span)	---	---
---	---	63mSec., 20mSec., 17mSec.	<200mSec.	---	---
---	---	15/sec., 50/sec., 60/sec.	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)
IP65 front	IP65 front	IP65 front	IP65 front	IP65 front	IP65 front
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	Function 'tare' and 'auto-tare' Scale factor Count units based on weight Up to 60 acquisitions/sec. Standard alarms Stability alarms Configurable rear control	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'
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 Units9	Includes units label Units10	Includes units label Units9	Includes units label Units7	Includes units label Units7	Includes units label Units7
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



MODELS

Model	M60-232					
Main function	RS-232 ASCII REPEATER 					
Ranges	Protocol RS-232 ASCII					
Digits	6					
Reading	999999/-199999					
Digit height	14mm					
Channels	1					
Excitation voltage	---					
Notes	---					
Total error	---					
Thermal drift	---					
Step response	---					
Acquisitions	---					
Power	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)					
Consumption	<1,5W (meter only) <4,0W (with options)					
Isolation	2500Veff (H) 1500Veff (L)					
Protection	IP65 front					
Output and control options	Maximum 3					
Particular functions of this model	'Slave', 'Process' or 'Text' modes Function 'Watchdog' Function 'Bus Activity'					
Common functions	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password					
Labeling units	Includes units label Units7					
Configuration	From front keypad					
Mounting	Panel (optional wall mount and DIN rail)					
Weight	<150gr					
Depth	91mm					

MODELS AND REFERENCES
SERIES M



OUTPUT AND CONTROL OPTIONS

Option	R1	T1	SSR	S4	S2
Main function	1 RELAY OUTPUT 	1 TRANSISTOR OUTPUT 	1 SSR CONTROL OUTPUT 	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	Transistor output 35Vdc, max. 50mA	Output to control SSR relay +15Vdc, max. 45mA	Up to 38.400bps	Up to 38.400bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	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).				

Option	S4	S2
Main function	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	Up to 38.400bps	Up to 38.400bps
Isolation	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1, 2 or 3	1, 2 or 3
Installable at	Option 1, 2 and 3	Option 1, 2 and 3
Notes		

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	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1 and leaves free options 2 and 3.	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1 and 2 and leaves free Option 3.	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1, 2 and 3.

OTHER OPTIONS

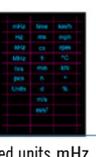
	NBT	G
	WITHOUT FRONT KEYPAD 	GREEN DIGITS 
	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.	

ACCESSORIES

OPTIONS AND ACCESSORIES

SERIES M

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 for additional mechanical and IP65 front 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.

Option	LABEL UNITS2	LABEL UNITS4	LABEL UNITS7	LABEL UNITS9	LABEL UNITS10
Main function	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 
Notes	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac and “ ”.	Printed units mHz, Hz, KHz, mSec, Sec, min, Units, RPM and “ ”.	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac, %, °C, °F, ph, m, cm, mm, bar, psi, Pa, N, Ω, kΩ, W, kW, MW, kV, kA, m/min, rpm, l and “ ”.	Printed units l/seg, l/min, l/h, m3/s, m3/min, m3/h, T/s, T/min, T/h, gls/s, gls/min, gls/h, l, m3, T, gls, mm, cm, m, units, m/min, rpm, g, kg, t, mg, Lb, N, kN and “ ”.	Printed units mHz, Hz, kHz, MHz, hrs, pcs, time, ms, cs, s, min, h, d, m/s, m/s², km/h, mph, rpm, °C, kN, °, % 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)	- NBT (without front keypad)
M40	- T	- L (11-60Vdc and 24/48Vac)	- T1 (1 transistor)	- T1 (1 transistor)	- T1 (1 transistor)	- G (Green digits)
	- A		- SSR (1 control SSR)	- SSR (1 control SSR)	- SSR (1 control SSR)	- (empty)
	- D		- AO (Analog output)	- AO (Analog output)	- AO (Analog output)	
	- R		- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	
	- F		- S4 (RS-485)	- S4 (RS-485)	- S4 (RS-485)	
	- C1		- S2 (RS-232)	- S2 (RS-232)	- S2 (RS-232)	
	- CR		- (empty)	- (empty)	- (empty)	
	- LC		- R2*			
	- RTU		- R4*			
	- 485		- R6*			
	- 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.

SERIES K



Digits	4
Digit height	20mm
Color	Red
Reading	9999/-1999
Frontal	96x48mm
Mounting	Panel
Power	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
Output and control options	Relay outputs (1 to 6) Transistor outputs (1 to 3) SSR control outputs (1 to 3) 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 8 meters Front keypad configuration Up to 3 output and control options Isolated circuits Protection front 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 Chronometer, Time counter Weight - Load cells For Potentiometers Repeater for Modbus RTU Repeater for RS-485, RS-232

The Series K of digital panel meters offers versatility and reliability in all type of industrial applications. The 20 mm digit height provide an excellent reading for a distance of up to 8 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 K 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 K 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 K 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 K offers a wide range of digital panel meters, with multiple functions, allowing for a high level of customization, and a wide variety of references for analog and digital signals. A series adapted to the needs of the industry, with the differential of its 20 mm digits height.

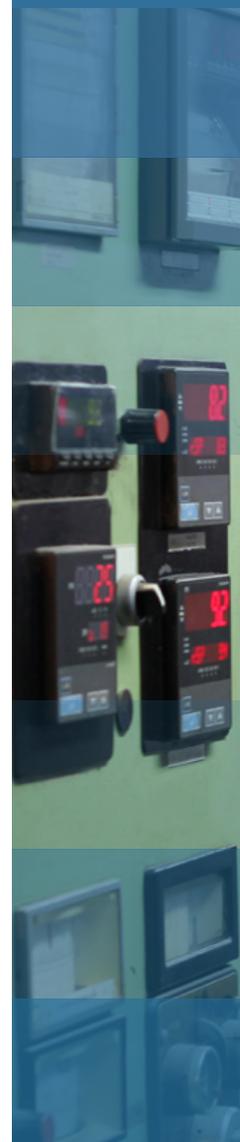
MODELS

Model	K40-P	K40-T	K40-A	K40-D	K40-C1
Main function	PROCESS METER 	TEMPERATURE METER 	AC VOLTMETER AC AMMETER 	DC VOLTMETER DC AMMETER 	COUNTER, RATEMETER, PERIODMETER 
Ranges	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	Impulse counter up to 250KHz Ratemeter up to 500KHz Periodmeter up to 1000sec.
Digits	4	4	4	4	4
Reading	9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999
Digit height	20mm	20mm	20mm	20mm	20mm
Channels	1	1	1	1	1
Excitation voltage	5 to 20Vdc (max. 35mA)	---	---	---	5 to 18Vdc (max. 70mA)
Notes	---	---	TrueRMS measure CAT-II and CAT-III AC or AC+DC coupling	---	Highly configurable Accepts all type of sensors (NPN, PNP, ...) Accepts quadrature signals Front and/or rear reset
Total error	<0,05%	<0,2°C Pt100/RTD <2°C/<4°C thermocouples	<0,15% a <0,25%	<0,10% a <0,15%	---
Thermal drift	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)	---
Step response	<120mSec.	---	<300mSec.	<210mSec.	---
Acquisitions	15/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)
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)
Isolation	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)
Protection	IP65 front	IP65 front	IP65 front	IP65 front	IP65 front
Output and control options	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 'Peak&Hold'	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	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'
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
Labeling units	Includes units label Units7	Includes units label Units7	Includes units label Units2	Includes units label Units2	Includes units label Units9
Configuration	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)
Weight	<150gr	<150gr	<150gr	<150gr	<150gr
Depth	91mm	91mm	91mm	91mm	91mm

MODELS AND REFERENCES

SERIES K

K40-CR	K40-LC	K40-R	K40-RTU	K40-485	K40-232
CHRONOMETER TIME COUNTER	WEIGHT LOAD CELLS	POTENTIOMETRIC METER	MODBUS RTU REPEATER	RS-485 ASCII REPEATER	RS-232 ASCII REPEATER
 Time	 Weight	 Potentiometer	 Digital	 Digital	 Digital
Hours, minutes, seconds, tenths and cents of second Hour or decimal format	1mV/V, 2mV/V, 3mV/V and others signals up to 100mV	Pot<5K, Pot<5M, passive mode	Protocol Modbus RTU	Protocol RS-485 ASCII	Protocol RS-232 ASCII
4	4	4	4	4	4
9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999
20mm	20mm	20mm	20mm	20mm	20mm
1	1	1	1	1	1
5 to 18Vdc (max. 70mA)	5 or 10Vdc (max. 140mA)	+5Vdc	---	---	---
Independent start, stop and reset controls Up and down counting Highly configurable Front and/or rear reset Memory in case of power loss Accepts all type of controls (NPN, PNP, ...)	Alarms standard or by stability Configurable acquisitions per second Noise rejection to 50 and 60Hz.	---	---	---	---
<0,01%	<0,05%	<0,15%	---	---	---
20ppm/°C	100ppm/°C	10ppm/°C (offset) 35ppm/°C (offset+span)	---	---	---
---	63mSec., 20mSec., 17mSec.	<200mSec.	---	---	---
---	15/sec., 50/sec., 60/sec.	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)
IP65 front	IP65 front	IP65 front	IP65 front	IP65 front	IP65 front
Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3	Maximum 3
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	Function 'tare' and 'auto-tare' Scale factor Count units based on weight Up to 60 acquisitions/sec. Standard alarms Stability alarms Configurable rear control	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 Units10	Includes units label Units9	Includes units label Units7	Includes units label Units7	Includes units label Units7	Includes units label Units7
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	T1	SSR	AO	RTU
Main function	1 RELAY OUTPUT 	1 TRANSISTOR OUTPUT 	1 SSR CONTROL OUTPUT 	1 ANALOG OUTPUT 	1 MODBUS RTU 
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	Transistor output 35Vdc, max. 50mA	Output to control SSR relay +15Vdc, max. 45mA	Output in 4/20mA, 0/10Vdc	Up to 38.400bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	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.	

Option	S4	S2
Main function	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	Up to 38.400bps	Up to 38.400bps
Isolation	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1, 2 or 3	1, 2 or 3
Installable at	Option 1, 2 and 3	Option 1, 2 and 3
Notes		

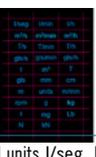
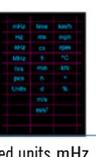
SPECIAL OPTIONS

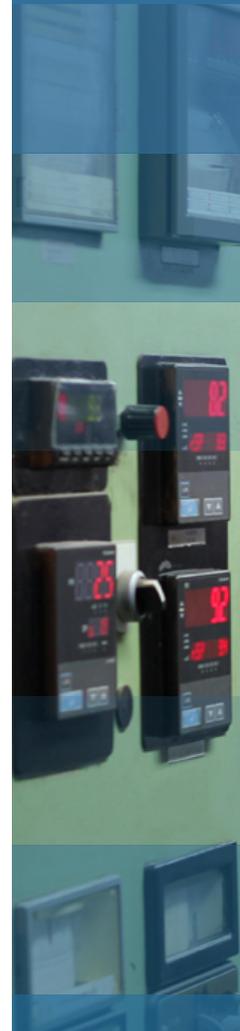
Option	R2	R4	R6
Main function	2 RELAY OUTPUTS 	4 RELAY OUTPUTS 	6 RELAY OUTPUTS 
Characteristics	3 terminals (NC, NO, common) 250Vac, Maximum 6 A	3 terminals (NC, NO, common) 250Vac, Maximum 6 A	3 terminals (NC, NO, common) 250Vac, Maximum 6 A
Isolation	Yes, 2500Veff	Yes, 2500Veff	Yes, 2500Veff
Maximum number of options installable	1	1	1
Installable at	Option 1	Option 1	Option 1
Notes	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1 and leaves free options 2 and 3.	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1 and 2 and leaves free Option 3.	Not compatible with other options R1, T1, SSR, R2, R4 or R6. Installs at Option 1, 2 and 3.

OTHER OPTIONS

	NBT
	WITHOUT FRONT KEYPAD 
	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 for additional mechanical and IP65 front 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.

Option	LABEL UNITS2	LABEL UNITS4	LABEL UNITS7	LABEL UNITS9	LABEL UNITS10
Main function	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 
Notes	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac and “ ”.	Printed units mHz, Hz, KHz, mSec, Sec, min, Units, RPM and “ ”.	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac, %, °C, °F, ph, m, cm, mm, bar, psi, Pa, N, Ω, kΩ, W, kW, MW, kV, kA, m/min, rpm, l and “ ”.	Printed units l/seg, l/min, l/h, m3/s, m3/min, m3/h, T/s, T/min, T/h, gls/s, gls/min, gls/h, l, m3, T, gls, mm, cm, m, units, m/min, rpm, g, kg, t, mg, Lb, N, kN and “ ”.	Printed units mHz, Hz, kHz, MHz, hrs, pcs, time, ms, cs, s, min, h, d, m/s, m/s², km/h, mph, rpm, °C, kN, °, % and “ ”.



How to order

Model	Power	Option1	Option2	Option3	Others
K40 - A	H	---	---	---	---
- P	- H (85-265Vac/dc)	- R1 (1 relay)	- R1 (1 relay)	- R1 (1 relay)	- NBT (without front keypad)
- T	- L (11-60Vdc and 24/48Vac)	- T1 (1 transistor)	- T1 (1 transistor)	- T1 (1 transistor)	- (empty)
- A		- SSR (1 control SSR)	- SSR (1 control SSR)	- SSR (1 control SSR)	
- D		- AO (Analog output)	- AO (Analog output)	- AO (Analog output)	
- R		- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	
- C1		- S4 (RS-485)	- S4 (RS-485)	- S4 (RS-485)	
- CR		- S2 (RS-232)	- S2 (RS-232)	- S2 (RS-232)	
- LC		- (empty)	- (empty)	- (empty)	
- RTU		- R2*			
- 485		- R4*			
- 232		- R6*			

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



Digits	4
Digit height	14mm
Color	Red Green
Reading	9999/-1999
Frontal	72x36mm
Mounting	Panel
Power	H (85-265Vac/dc) L (11-60Vdc and 24/48Vac)
Output and control options	Relay outputs (1 to 4) Transistor outputs (1 to 4) SSR control outputs (1 to 4) Analog outputs MODBUS RTU, RS-485, RS-232
Accessories	Adapter 72x72mm Labeling units
Main features	Reading up to 5 meters Front keypad configuration Up to 2 output and control options Isolated circuits Protection IP54 Configurable brightness levels Advanced alarm management Function 'Fast Access' Function 'On power up' Max. and min. memory Function password 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 Weight - Load cells Chronometer, Time counter For Potentiometers Repeater for Modbus RTU Repeater for RS-485, RS-232

The Series S of digital panel meters offers versatility and reliability in all type of industrial applications. The differential feature is the 72x36mm compact size, a reduced housing format, that still maintains the standard 14mm digit height, providing 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 S 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 S 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 S 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 S is a compact sized range of panel meters designed for applications where reduced spaced is a must, but still the standard distance view from larger series is maintained. Wide range of input signals, both analog and digital, and the output and control modules available, allows for a high level of customization, fitting to all type of industrial needs



MODELS

Model	S40-P	S40-T	S40-A	S40-D	S40-C1
Main function	PROCESS METER 	TEMPERATURE METER 	AC VOLTMETER AC AMMETER 	DC VOLTMETER DC AMMETER 	COUNTER, RATEMETER, PERIODMETER 
Ranges	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	Impulse counter up to 250KHz Ratemeter up to 500KHz Periodmeter up to 1000sec.
Digits	4	4	4	4	4
Reading	9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999
Digit height	14mm	14mm	14mm	14mm	14mm
Channels	1	1	1	1	1
Excitation voltage	5 to 20Vdc (max. 35mA)	---	---	---	5 to 18Vdc (max. 70mA)
Notes	---	---	TrueRMS measure CAT-II and CAT-III AC or AC+DC coupling	---	Highly configurable Accepts all type of sensors (NPN, PNP, ...) Accepts quadrature signals Front and/or rear reset
Total error	<0,05%	<0,2°C Pt100/RTD <2°C/<4°C thermocouples	<0,15% a <0,25%	<0,10% a <0,15%	---
Thermal drift	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)	---
Step response	<120mSec.	---	<300mSec.	<210mSec.	---
Acquisitions	15/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)
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)
Isolation	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)	2500Veff (H) 1500Veff (L)
Protection	IP54	IP54	IP54	IP54	IP54
Output and control options	Maximum 2	Maximum 2	Maximum 2	Maximum 2	Maximum 2
Particular functions of this model	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	8 selectable 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'
Common functions	Function 'Fast access' Function 'On power up' 5 brightness levels Max. and min. memory Password	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 Units ⁷	Includes units label Units ⁷	Includes units label Units ²	Includes units label Units ²	Includes units label Units ⁹
Configuration	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Mounting	Panel	Panel	Panel	Panel	Panel
Weight	<150gr	<150gr	<150gr	<150gr	<150gr
Depth	98mm	98mm	98mm	98mm	98mm

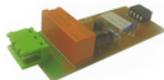
MODELS AND REFERENCES

SERIES S

S40-CR	S40-LC	S40-R	S40-RTU	S40-485	S40-232
CHRONOMETER, TIME COUNTER	WEIGHT LOAD CELLS	POTENTIOMETERS	MODBUS RTU REPEATER	RS-485 ASCII REPEATER	RS-232 ASCII REPEATER
					
Hours, minutes, seconds, tenths and cents of second Hour or decimal format	1mV/V, 2mV/V, 3mV/V and others signals up to 100mV	Pot<5K, Pot<5M, passive mode	Protocol Modbus RTU	Protocol RS-485 ASCII	Protocol RS-232 ASCII
4	4	4	4	4	4
9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999	9999/-1999
14mm	14mm	14mm	14mm	14mm	14mm
1	1	1	1	1	1
5 to 18Vdc (max. 70mA)	5 or 10Vdc (max. 140mA)	+5Vdc	---	---	---
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, ...)	Alarms standard or by stability Configurable acquisitions per second Noise rejection to 50 and 60Hz.	---	---	---	---
<0,01%	<0,05%	<0,15%	---	---	---
20ppm/°C	100ppm/°C	10ppm/°C (offset) 35ppm/°C (offset+span)	---	---	---
---	63mSec., 20mSec., 17mSec.	<200mSec.	---	---	---
12/second	15/sec., 50/sec., 60/sec.	5/sec.	---	---	---
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 front	IP54	IP54	IP54	IP54
Maximum 2	Maximum 2	Maximum 2	Maximum 2	Maximum 2	Maximum 2
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	Function 'tare' and 'auto-tare' Scale factor Count units based on weight Up to 60 acquisitions/sec. Standard alarms Stability alarms Configurable rear control	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 Units 10	Includes units label Units9	Includes units label Units7	Includes units label Units7	Includes units label Units7	Includes units label Units7
From front keypad	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Panel	Panel	Panel	Panel	Panel	Panel
<150gr	<150gr	<150gr	<150gr	<150gr	<150gr
98mm	98mm	98mm	98mm	98mm	98mm



OUTPUT AND CONTROL OPTIONS

Option	R1	T1	SSR	A0	RTU
Main function	1 RELAY OUTPUT 	1 TRANSISTOR OUTPUT 	1 SSR CONTROL OUTPUT 	1 ANALOG OUTPUT 	1 MODBUS RTU 
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	Transistor output 35Vdc, max. 50mA	Output to control SSR relay +15Vdc, max. 45mA	Output in 4/20mA, 0/10Vdc	Up to 38.400bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	Yes, 1000Vdc	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Installable at	Option 1 and 2	Option 1 and 2	Option 1 and 2	Option 1 and 2	Option 1 and 2
Notes	For 2 relay outputs, reference R1-R1.			Output signal configurable for active and passive. Direct and inverse slope.	

Option	S4	S2
Main function	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	Up to 38.400bps	Hasta 38.400bps
Isolation	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1 or 2	1 or 2
Installable at	Option 1 and 2	Option 1 and 2
Notes		

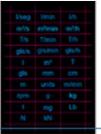
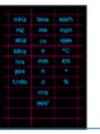
SPECIAL OPTIONS

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

OTHER OPTIONS

G
GREEN DIGITS 

Option	KA72			
Main function	ADAPTER 72X72mm 			
Notes	Adapter for 72x72mm front size. For panel meters with front size 72x36mm.			

Option	LABEL UNITS2	LABEL UNITS4	LABEL UNITS7	LABEL UNITS9	LABEL UNITS10
Main function	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 	LABEL WITH PRINTED UNITS 
Notes	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac and “ ”.	Printed units mHz, Hz, KHz, mSec, Sec, min, Units, RPM and “ ”.	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac, %, °C, °F, ph, m, cm, mm, bar, psi, Pa, N, Ω, kΩ, W, kW, MW, kV, kA, m/min, rpm, l and “ ”.	Printed units l/seg, l/min, l/h, m3/s, m3/min, m3/h, T/s, T/min, T/h, gls/s, gls/min, gls/h, l, m3, T, gls, mm, cm, m, units, m/min, rpm, g, kg, t, mg, Lb, N, kN and “ ”.	Printed units mHz, Hz, kHz, MHz, hrs, pcs, time, ms, cs, s, min, h, d, m/s, m/s², km/h, mph, rpm, °C, kN, °, % and “ ”.

How to order

Model	Power	Option1	Option2	Others
S40 - A	H	---	---	---
- P	- H (85-265Vac/dc)	- R1 (1 relay)	- R1 (1 relay)	- G (Green digits)
- T	- L (11-60Vdc and 24/48Vac)	- T1 (1 transistor)	- T1 (1 transistor)	- (empty)
- A		- SSR (1 control SSR)	- SSR (1 control SSR)	
- D		- AO (Analog output)	- AO (Analog output)	
- R		- RTU (MODBUS RTU)	- RTU (MODBUS RTU)	
- C1		- S4 (RS-485)	- S4 (RS-485)	
- CR		- S2 (RS-232)	- S2 (RS-232)	
- LC		- (empty)	- (empty)	
- RTU		- R2*		
- 485		- R4*		
- 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

For relay outputs, use options 'R1' as standard for 1, 2 and 3 relay outputs. Use "Special options" R2 or R4 when modules R1 can not fill the requested application. Example: instrument with 2 relays and 1 Analog output, use 1 x R2 and 1 x AO (S40-P-H-R2-AO).



SERIES B



Digits	4, 6
Digit height	60mm 100mm
Color	Red Green
Reading	999999/-199999 9999/-1999
Frontal	340x135 mm 436x135 mm 542x166 mm 740x166 mm
Mounting	Panel Wall mount Hanging
Power	H (85-265Vac and 120-370Vdc) L (11-36Vdc)
Output and control options	Relay outputs (1 to 3) Transistor outputs (1 to 3) SSR control outputs (1 to 3) Analog outputs MODBUS RTU, RS-485, RS-232
Accessories	Remote keypad Panel junction protector
Main features	Reading up to 25 meters Reading up to 50 meters Sturdy metallic IP65 housing Front keypad configuration Panel, wall and hanging mount Configurable brightness levels Up to 3 output and control options Isolated circuits Advanced alarm management Function 'Fast Access' Function 'On power up' Max. and min. memory Function password Modular internal architecture
Main function / Input signal	For Process For Pt100/RTD and Thermocouples Counter, Ratemeter, Periodmeter Chronometer, Time counter For Potentiometers Weight - Load cells Repeater for Modbus RTU Repeater for RS-485, RS-232

The Series B offers a wide range of large format meters, for all type of industrial applications.

Its differential feature is the large digit size implemented, with available versions with 60mm digit height and reading up to 25 meters, and versions with 100mm digit height and reading up to 50 meters.

These instruments can perform control functions, as they can mount relay or transistor outputs, SSR controls, analog retransmission signals, and communications in Modbus RTU, RS-485 or RS-232 ASCII protocols. All circuits are isolated for better performance and protection.

Sturdy and multifunctional housing, Series B is supplied with a full IP65 metallic housing, designed to be panel mounted, wall mounted or hanging mounted. Front keypad allows for easy configuration, and connection for remote keypad is provided.

Special front lens made from antireflexive tinted methacrylate, provides a sharp and clean reading even at long distances. Additionally, 5 levels of configurable brightness offers adaptability of brightness to most environments.

In short, the Series B is a strong and sturdy large format display, that provides sharp and clean reading up to 25 meters and 50 meters distance, with optional output and control signals, suitable for all type of industrial environments and applications.



MODELS

Model	B24-P B44-P	B26-P B46-P	B24-T B44-T	B24-C1 B44-C1	B26-C1 B46-C1
Main function	PROCESS METER 	PROCESS METER 	TEMPERATURE METER 	COUNTER, RATEMETER, PERIODMETER 	COUNTER, RATEMETER, PERIODMETER 
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	Impulse counter up to 250KHz Ratemeter up to 500KHz Periodmeter up to 1000sec.	Impulse counter up to 250KHz Ratemeter up to 500KHz Periodmeter up to 1000sec.
Digits	4	6	4	4	6
Reading	9999/-1999	999999/-199999	9999/-1999	9999/-1999	999999/-199999
Digit height	60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm
Channels	1	1	1	1	1
Excitation voltage	5 to 20Vdc (max. 35mA)	5 to 20Vdc (max. 35mA)	- - -	5 to 18Vdc (max. 70mA)	5 to 18Vdc (max. 70mA)
Notes	- - -	- - -	- - -	Highly configurable Accepts all type of sensors (NPN, PNP, ...) Accepts quadrature signals Front and/or rear reset	Highly configurable Accepts all type of sensors (NPN, PNP, ...) Accepts quadrature signals Front and/or rear reset
Total error	<0,05%	<0,03%	<0,2°C pt100 <2°C/<4°C thermocouples	- - -	- - -
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)	- - -	- - -
Step response	<120mSec.	<300mSec.	- - -	- - -	- - -
Acquisitions	15/second	3,5/second	3/second	- - -	- - -
Power	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)
Consumption	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)
Isolation	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)
Protection	full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing
Output and control options	Maximum 2	Maximum 3	Maximum 2	Maximum 2	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	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'	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'
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
Labeling units	[check]	[check]	[check]	[check]	[check]
Configuration	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Mounting	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging
Weight	2200gr / 2500gr	3500gr / 4500gr	2200gr / 2500gr	2200gr / 2500gr	3500gr / 4500gr
Depth	80mm	80mm	80mm	80mm	80mm

SERIES B

B24-CR B44-CR	B26-CR B46-CR	B24-LC B44-LC	B26-LC B46-LC	B24-POT B44-POT
CHRONOMETER, TIME COUNTER 	CHRONOMETER, TIME COUNTER 	WEIGHT LOAD CELLS 	WEIGHT LOAD CELLS 	POTENTIOMETRIC METER 
Hours, minutes, seconds, tenths and cents of second Hour or decimal format	Hours, minutes, seconds, tenths and cents of second Hour or decimal format	1mV/V, 2mV/V, 3mV/V and others signals up to 100mV	1mV/V, 2mV/V, 3mV/V and others signals up to 100mV	Pot<5K, Pot<5M, passive mode
4	6	4	6	4
9999/-1999	999999/-199999	9999/-1999	999999/-199999	9999/-1999
60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm
1	1	1	1	1
5 to 18Vdc (max. 70mA)	5 to 18Vdc (max. 70mA)	5 or 10Vdc (max. 140mA)	5 or 10Vdc (max. 140mA)	+5Vdc
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, ...)	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, ...)	Alarms standard or by stability Configurable acquisitions per second Noise rejection to 50 and 60Hz.	Alarms standard or by stability Configurable acquisitions per second Noise rejection to 50 and 60Hz.	- - -
<0,01%	<0,01%	<0,05%	<0,05%	<0,15%
20ppm/°C	20ppm/°C	100ppm/°C	100ppm/°C	10ppm/°C(offset) 35ppm/°C (offset+span)
- - -	- - -	63mSec., 20mSec., 17mSec.	63mSec., 20mSec., 17mSec.	<200mSec.
- - -	- - -	15/sec., 50/sec., 60/sec.	15/sec., 50/sec., 60/sec.	5/second
H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)
3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)
2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)
full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing
Maximum 2	Maximum 3	Maximum 2	Maximum 3	Maximum 2
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	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	Function 'tare' and 'auto-tare' Scale factor Count units based on weight Up to 60 acquisitions/sec. Standard alarms Stability alarms Configurable rear control	Function 'tare' and 'auto-tare' Scale factor Count units based on weight Up to 60 acquisitions/sec. Standard alarms Stability alarms Configurable rear control	Scalable reading 20 segment linearization Display filters Function 'Measure' Function 'Field correction' Function 'Tare' Alarms
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
[check]	[check]	[check]	[check]	[check]
From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging
2200gr / 2500gr	3500gr / 4500gr	2200gr / 2500gr	3500gr / 4500gr	2200gr / 2500gr
80mm	80mm	80mm	80mm	80mm



MODELS

Model	B24-RTU B44-RTU	B26-RTU B46-RTU	B24-485 B44-485	B26-485 B46-485	B24-232 B44-232
Main function	MODBUS RTU REPEATER 	MODBUS RTU REPEATER 	RS-485 ASCII REPEATER 	RS-485 ASCII REPEATER 	RS-232 ASCII REPEATER 
Ranges	Protocol Modbus RTU	Protocol Modbus RTU	Protocol RS-485 ASCII	Protocol RS-485 ASCII	Protocol RS-232 ASCII
Digits	4	6	4	6	4
Reading	9999/-1999	999999/-199999	9999/-1999	999999/-199999	9999/-1999
Digit height	60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm	60mm 100mm
Channels	1	1	1	1	1
Excitation voltage			---	---	---
Notes	---	---	---	---	---
Total error	---	---	---	---	---
Thermal drift	---	---	---	---	---
Step response	---	---	---	---	---
Acquisitions	---	---	---	---	---
Power	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)	H (85-265Vac and 120-370Vdc) L (11-36Vdc)
Consumption	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)	3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)	3,0W / 5,25W (meter only) 5,0W / 6,75 W (with options)
Isolation	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)	2500Vac (H) 1500Vdc (L)
Protection	full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing	full IP65 housing
Output and control options	Maximum 2	Maximum 3	Maximum 2	Maximum 3	Maximum 2
Particular functions of this model	'Slave' or 'Process' modes Function 'Watchdog' Configurable 16 bits or 32 bits registers Function 'Bus Activity'	'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'	'Slave', 'Process' or 'Text' modes Function 'Watchdog' Function 'Bus Activity'
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
Labeling units	[check]	[check]	[check]	[check]	[check]
Configuration	From front keypad	From front keypad	From front keypad	From front keypad	From front keypad
Mounting	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging	Panel, wall, hanging
Weight	2200gr / 2500gr	3500gr / 4500gr	2200gr / 2500gr	3500gr / 4500gr	2200gr / 2500gr
Depth	80mm	80mm	80mm	80mm	80mm

MODELS AND REFERENCES SERIES B

B26-232 B46-232				
RS-232 ASCII REPEATER				
				
Protocol RS-232 ASCII				
6				
999999/-199999				
60mm 100mm				
1				

H (85-265Vac and 120-370Vdc) L (11-36Vdc)				
3,5W / 5,5W (meter only) 5,5W / 7,0 W (with options)				
2500Vac (H) 1500Vdc (L)				
full IP65 housing				
Maximum 3				
'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				
[check]				
From front keypad				
Panel, wall, hanging				
3500gr / 4500gr				
80mm				



OUTPUT AND CONTROL OPTIONS

Option	R1	T1	SSR	A0	RTU
Main function	1 RELAY OUTPUT 	1 TRANSISTOR OUTPUT 	1 SSR CONTROL OUTPUT 	1 ANALOG OUTPUT 	1 MODBUS RTU 
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 3A	Transistor output 35Vdc, max. 50mA	Output to control SSR relay +15Vdc, max. 45mA	Output in 4/20 mA, 0/10 Vdc	Up to 38.400bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	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				Output signal configurable for active and passive. Direct and inverse slope	

Option	S4	S2
Main function	1 RS-485 ASCII 	1 RS-232 ASCII 
Characteristics	Up to 38.400bps	Up to 38.400bps
Isolation	Yes, 1000Vdc	Yes, 1000Vdc
Maximum number of options installable	1, 2 or 3	1, 2 or 3
Installable at	Option 1, 2 and 3	Option 1, 2 and 3
Notes		

OTHER OPTIONS

Option	XXXX	Red LED	Green LED	
Main function	CABLE PRE INSTALLED			
Notes				

Option	Units m/min	Units °C	Units °C	
Main function	FOR SIZES B24 AND B26 	FOR SIZES B24 AND B26 	FOR SIZES B44 AND B46 	
Notes				

Option	RKB			
Main function	<p>REMOTE KEYPAD</p> 			
Notes	Keypad for remote configuration (cable not included).			

Option				
Main function				
Notes				



How to order

Format	Model	Power	Color	Option 1	Option 2	Option 3*	Custom
B46	- C1	- H	- R	---	---	---	---
B24	- P	- H (85-265Vac and 120-370Vdc)	- R (red)	- R1 (1 relay)	- R1 (1 relay)	- R1 (1 relay)	- (empty)
B26	- T		- G (green)	- T1 (1 transistor)	- T1 (1 transistor)	- T1 (1 transistor)	
B44	- POT	- L (11-36Vdc)		- SSR (1 control SSR)	- SSR (1 control SSR)	- SSR (1 control SSR)	
B46	- C1			- AO (1 analog output)	- AO (1 analog output)	- AO (1 analog output)	
	- CR			- RTU (Modbus RTU)	- RTU (Modbus RTU)	- RTU (Modbus RTU)	
	- LC			- S4 (RS-485)	- S4 (RS-485)	- S4 (RS-485)	
	- RTU			- S2 (RS-232)	- S2 (RS-232)	- S2 (RS-232)	
	- 485			- 0 (empty)	- 0 (empty)	- 0 (empty)	
	- 232						

*Option 3 only available with formats B26 and B46



DIGITAL PANEL METERS SECTION OEM

OEM SERIES

SERIES C



Digits	4, 6
Digit height	14mm
Color	Red
Reading	9999/-1999, 999999/-199999
Frontal	96x48mm
Mounting	Panel
Power	U (18-265Vac/dc)
Output and control options	Relay outputs (1 to 2) Analog output Modbus RTU
Accessories	Wall mount housing DIN rail mount Benchtop housing Adapter 96x96mm Labeling units (included)
Main features	Section OEM Multi signal Reading up to 5 meters Front keypad configuration Optional relay, analog and serial outputs Protection IP50/IP65 Plug-in screw terminals High quality front lens Function 'ECO' Function 'Fast access' Function 'External control'
Main function / Input signal	For flow applications For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples K J E N L C R S B T AC Voltmeter up to 600Vac DC Voltmeter up to $\pm 600Vdc$ Frequency meter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to $\pm 5Adc$ For Resistances For Potentiometers

The Series C of digital panel meters offers a range of low-cost but highly versatile instruments for most usual industrial applications. The standard 14mm digit height provides an excellent view for a distance of up to 5 meters, with a sharp and clean reading. The visual lines of the Series C stand for a clean and wide front space, where the main role is focused on the value displayed. The keypad located at the bottom provides configuration access to the instrument.

Series C achieves a reduced price mainly obtained from reduced technical specifications compared with higher series, although still offering around 0.2% FS accuracy and 3 acquisitions / second.

Series C also has a limited compatibility for output and control options compared with Series M, but still can feature 1 or 2 relay outputs, or 1 analog 4/20mA output or 1 serial RS-485 ASCII output. All circuits are isolated.

Series C benefits from scale economy, making use of high quality components, power supplies, housings and quality procedures from higher grade Series M.

The Series C internal architecture features a modular design providing field upgradable option cards, to expand functionality as needed.

In short, the Series C is the recommended series for machine manufacturers, OEM integrators and commercial distributors, due its reduced price and its wide range of signals accepted. It presents a compact solution, technically reliable, that adapts to most usual needs in the industrial automation field.

MODELS

Model	C40-D	C60-FL
Main function	MULTI SIGNAL PANEL METER	FLOW METER
Ranges	AC voltages up to ~600Vac DC voltages up to ±600Vdc Frequency meter up to 100Hz AC currents up to 5Aac DC currents up to ±5Adc 4/20mA, 0/10Vdc PT100 (2 and 3 wireS), PT500, PT1000, Ni100, Ni200, Ni1000, PTC, NTC Thermocouples K J E N L C R S B T Resistances Potentiometers	Impulses from flow sensors (NPN, PNP, 'reed', mechanical, pick-up, mVac, push-pull and others Readings for both instant and total flow
Digits	4	6
Reading	9999/-1999	999999/-199999
Digit height	14mm	14mm
Channels	1	1
Excitation voltage	15 Vdc (max 30 mA)	15 Vdc (max 50 mA)
Notes	AC measures in True RMS	With reset and control to switch between instant and total flow
Total error	<0,2%depends on selected input range	<0.01%
Thermal drift	<150ppm/°	<20ppm
Step response	<300mSec.	with each impulse received
Acquisitions	3/second	with each impulse received
Power	U (18-265Vac/dc)	U (18-265Vac/dc)
Consumption	<1,5W meter only (<0.3W with 'ECO') <2,5W with options (<1.5W with 'ECO')	<1,5W meter only (<0.3W with 'ECO') <2,5W with options (<1.5W with 'ECO')
Isolation	15000Veff (60 seconds)	15000Veff (60 seconds)
Protection	IP50 (Option IP65)	IP50 (Option IP65)
Output options	Maximum 2	Maximum 2
Labeling units	Yes	Yes
Configuration	Frontal keypad and internal jumpers	Frontal keypad
Mounting	Panel (optional Wall)	Panel (optional Wall)
Weight	<150gr.	<150gr.
Depth	91mm (including terminals)	91mm (incluye terminales)

OUTPUT AND CONTROL OPTIONS

Option	A1	A2	M1	S1
Main function	1 RELAY OUTPUT	1 RELAY OUTPUT	1 ANALOG OUTPUT	1 MODBUS RTU SERIAL OUTPUT
				
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	3 terminals (NC, NO, common) 250Vac, max. 8A	Output in 4/20mA	Up to 9600bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	Yes, 1000Vdc	Yes, 1000Vdc
Installable at	Option1	Option2	Option1	Option1
Notes	For 2 relay outputs, install A1 and A2	Needs a module installed at option 1		

OTHER OPTIONS

Option	NBT	65
Main function	WITHOUT FRONT KEYPAD 	FRONT IP65 
Characteristics		
Notes	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.	O-ring for IP65 front protection.

ACCESSORIES

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 for additional mechanical and IP65 front 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.

Option	LABEL UNITS 7	LABEL UNITS 9				
Main function	LABEL WITH PRINTED UNITS (INCLUDED WITH C40-D) 	LABEL WITH PRINTED UNITS (INCLUDED WITH C60-FL) 				
Notes	Labeling with printed units : "Vdc", "Vac", "Adc", "Aac", "mAdc", "mAac", "%", "°C", "°F", "pH", "m", "cm", "mm", "bar", "psi", "Pa", "N", "Ω", "KΩ", "W", "KW", "MW", "KV", "KA", "m/min", "RPM", "l" and " ".	Labeling with printed units : "l/seg", "l/min", "l/h", "m3/s", "m3/min", "m3/h", "T/s", "T/min", "T/h", "gls/s", "gls/min", "gls/h", "l", "m3", "T", "gls", "mm", "cm", "m", "units", "m/min", "rpm", "g", "kg", "t", "mg", "Lb", "N", "kN" and " ".				

MODELS, OPTIONS, AND ACCESSORIES

SERIES C



How to order

Model	Power	Option 1	Option 2	Others	Customization
C40-D	U	A1	A2		
C40-D	- U	- A1	- A2	- NBT	- XXXX (customized execution)
C60-FL		- M1	- (empty)	- 65	
		- S1		- (empty)	
		- (empty)			

Note: Option 2 needs Option 1 installed.

EC4-ZR3



Digits	4
Digit height	14mm
Color	Red
Reading	9999/-1999
Frontal	96x48mm
Mounting	Panel
Power	U (18-265Vac/dc)
Output and control options	Relay outputs 4 (SPST) Analog output 1
Accessories	Wall mount housing DIN rail mount Benchtop housing Adapter 96x96mm Labeling units (included)
Main features	Section Special 'Full equip' instrument with 4 SPST relays and 1 isolated analog output 4/20mA included as a standard. Front keypad configuration Protection IP65 Plug-in screw terminals High quality front lens Function 'ECO' Function 'Fast access' Function 'External control'
Main function / Input signal	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples K J E N L C R S B T AC Voltmeter up to 600Vac DC Voltmeter up to ± 600 Vdc Frequency meter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ± 5 Aac For Resistances For Potentiometers

The EC4-ZR3 is a 'full equip' multisignal instrument designed to cover almost all of your analog signal needs.

The EC4-ZR3 accepts signals for process, temperature (Pt and Ni probes, NTC, PTC and thermocouples), resistances, and potentiometers. Accepts also voltages and currents, AC and DC, up to 600V and up to 5A, and can read also frequency up to 100Hz.

This powerful multisignal instrument combines with a single universal power supply from 18 to 265 Vac/dc.

To fulfill control needs, this instrument includes 4 relay outputs SPST, and 1 isolated analog output for 4/20mA retransmission.

Functional features include excitation voltage to power up the sensors, fail-safe mode for alarm control, configurable fast access menu at front key 'UP' (5), configurable external control, several display filters and 20 segment signal linearization.

In short, the EC4-ZR3 is a 'full equip' instrument ideal to have on stock for easy maintenance or new applications, at an excellent price.

MODELS

Model	EC4-ZR3
Main function	'FULL EQUIP' PANEL METER
Ranges	AC voltages up to ~600Vac DC voltages up to ±600Vdc Frequency meter up to 100Hz AC currents up to 5Aac DC currents up to ±5Adc 4/20mA, 0/10Vdc PT100 (2 and 3 wireS), PT500, PT1000, Ni100, Ni200, Ni1000, PTC, NTC Thermocouples K J E N L C R S B T Resistances Potentiometers
Digits	4
Reading	9999/-1999
Digit height	14mm
Channels	1
Excitation voltage	15 Vdc (max 30 mA)
Notes	AC measures in True RMS
Total error	<0,2% depends on selected input range
Thermal drift	<150ppm/°
Step response	<300mSec.
Acquisitions	3/second
Power	U (18-265Vac/dc)
Consumption	<1,5W meter only (<0.3W with 'ECO') <2,5W with options (<1.5W with 'ECO')
Isolation	15000Veff (60 seconds)
Protection	IP65
Output and control options	Included as a standard: 4 SPST relay outputs 1 isolated analog output 4/20 mA
Labeling units	Yes
Configuration	Frontal keypad and internal jumpers
Mounting	Panel (optional Wall)
Weight	<150gr.
Depth	91mm (including terminals)

OUTPUT AND CONTROL OPTIONS

Option	INCLUDED	INCLUDED	
Main function	4 RELAY OUTPUT	1 ANALOG OUTPUT	
Characteristics	2 terminals (NO, common) 250Vac, max. 8A	Output in 4/20mA	
Isolation	Yes, 3500Veff	Yes, 1000Vdc	
Notes			

OTHER OPTIONS

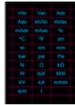
Option	NBT		
Main function	WITHOUT FRONT KEYPAD 		
Characteristics			
Notes	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.		

ACCESSORIES

EC4-ZR3

MODELS, OPTIONS, AND ACCESSORIES

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 for additional mechanical and IP65 front 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.

Option	LABEL UNITS7				
Main function	LABEL WITH PRINTED UNITS (INCLUDED) 				
Notes	Printed units Vdc, Vac, Adc, Aac, mVdc, mVac, mAdc, mAac, %, °C, °F, ph, m, cm, mm, bar, psi, Pa, N, Ω, kΩ, W, kW, MW, kV, kA, m/min, rpm, l and “ ”.				

How to order

Customization

EC4-ZR3

- XXXX (customized execution)

SERIES V



Digits	4
Digit height	14mm
Color	Red
Reading	9999/-1999
Frontal	72x36mm
Mounting	Panel
Power	U (18-265Vac/dc)
Output and control options	- - -
Accessories	Adapter 72x72mm
Main features	Section OEM Reading up to 5 meters Configuration keypad hidden behind the front filter Protection IP52 Function 'ECO' Function 'External control' Plug-in screw terminals Antirreflexive front lens
Main function / Input signal	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples K J E N L C R S B T AC Voltmeter up to 600Vac DC Voltmeter up to ± 600 Vdc Frequency meter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to ± 5 Aac For Resistances For Potentiometers

The Series V offers a range of low-cost digital panel meters oriented to a segment where price is the key decision element. Series V are multisignal meters adaptable to multiple applications.

The Series VIR mounts a reduced 72x36mm compact size housing format, that still maintains the standard 14mm digit height, providing 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.

Series V meters provide an external contact to activate predefined functions. Custom functions are available under request and for defined quantities.

The visual lines of the Series V are deliberately sober and gentle, oriented to be integrated into machinery and control panels, where a simple but effective reading is required. Configuration keypad is hidden behind the front filter.

MODELS

Model	V4P	V4E
Main function	PROCESS, TEMPERATURES, RESISTANCES AND POTENTIOMETERS	VOLTMETER AC/DC AMMETER AC/DC AC FREQUENCYMETER
Ranges	4/20mA, 0/10Vdc Pt100 (2 and 3 wireS), PT500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC Thermocouples K J E N L C R S B T Resistances Potentiometers	AC voltages up to ~600Vac DC voltages up to ±600Vdc Frequency meter up to 100Hz AC currents up to 5Aac DC currents up to ±5Adc
Digits	4	4
Reading	9999/-1999	9999/-1999
Digit height	14mm	14mm
Channels	1	1
Excitation voltage	15 Vdc (max 30 mA)	- - -
Notes		AC measures in True RMS
Total error	<0,2%depends on selected input range	<0,2%depends on selected input range
Thermal drift	<150ppm/°	<150ppm/°
Step response	<300mSec.	<300mSec.
Acquisitions	3/second	3/second
Power	U (18-265Vac/dc)	U (18-265Vac/dc)
Consumption	<1,5W meter only (<0.3W with 'ECO')	<1,5W meter only (<0.3W with 'ECO')
Isolation	15000Veff (60 seconds)	15000Veff (60 seconds)
Protection	IP52	IP52
Output and control options	- - -	- - -
Labeling units	Yes	Yes
Configuration	Frontal keypad (hidden) and internal jumpers	Frontal keypad (hidden) and internal jumpers
Mounting	Panel	Panel
Weight	<150gr.	<150gr.
Depth	75mm (including terminals)	75mm (including terminals)

ACCESSORIES

Option	KA72
Main function	ADAPTER 72X72mm
Notes	Adapter for 72x72mm front size. For panel meters with front size 72x36mm.



How to order

Model	Customization
V4P	-
V4P	- XXXX (customized)
V4E	- (empty)

INST. L35



Digits	3 1/2
Digit height	10mm
Color	Red
Reading	1999/-1999
Frontal	48x24mm
Mounting	Panel
Power	10-30Vdc
Output and control options	---
Accessories	---
Main features	Section OEM Reading up to 4 meters Potentiometer based adjustment Plug-in screw terminals Antirreflexive front lens Isolated circuits
Main function / Input signal	For Process and Vdc

The Instrument L35 is a OEM digital panel meter with contained price, but with specifications from higher series.

The differential feature is a small 48x24mm size housing, together with a reduced deep size of 68mm, including the connection terminals at the rear of the instrument, making this instrument specially interesting for applications where only reduced space is available.

With very low consumption, it mounts a 10 to 30 Vdc power supply, with reduced startup consumption peaks. The power supply is isolated and protected against short circuit.

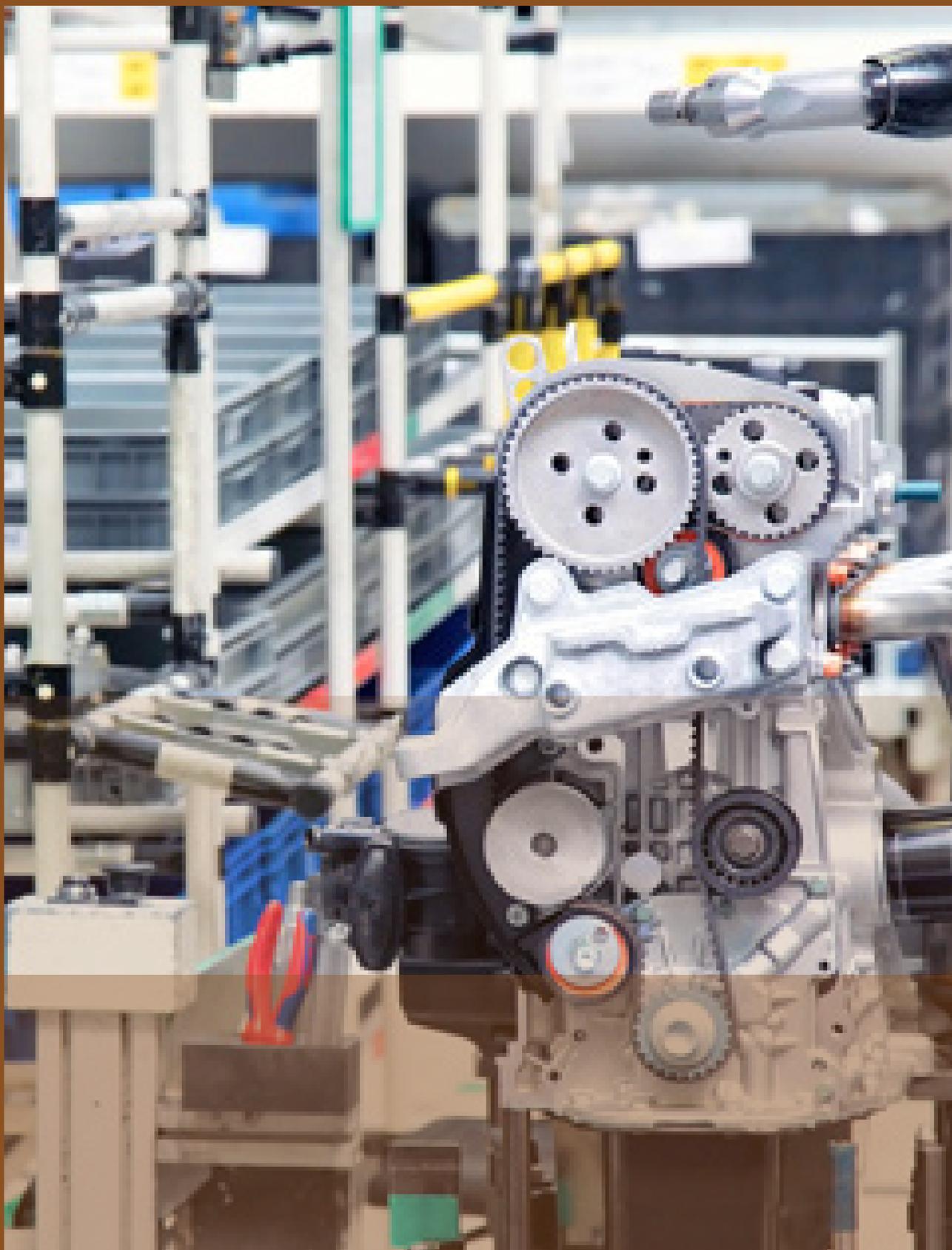
The Instrument L35 provides an excellent reading for a distance up to 4 meters, with a sharp and clean reading thanks to its 10mm height digits and the tinted methacrylate front lens.

In short, the Instrument L35 is a miniature panel meter with a high reliability for industrial applications.

Model	L35
Main function	PANEL METER FOR PROCESS 
Ranges	0/10Vdc, 4/20mA, ±200Vdc, ±20Vdc, ±2Vdc, 0/50mA, 0/10mA, 0/20mA
Digits	3 1/2
Reading	1999/-1999
Digit height	10mm
Channels	1
Excitation voltage	- - -
Notes	Scalable reading
Total error	<0,2%
Thermal drift	<50ppm
Step response	<2Sec.
Acquisitions	2,5/second
Power	10 to 30Vdc isolated
Consumption	<0,6W
Isolation	750Veff
Protection	IP40
Output and control options	- - -
Labeling units	- - -
Configuration	By potentiometers and jumpers
Mounting	Panel
Weight	<60gr.
Depth	68mm

How to order

	Input signal	Reading
L35	4/20mA	0/100,0
	- 4/20mA	- 0/1999
	- 0/10Vdc	- 0/750
	- 0/100Vdc	- 1250/-750
	- ...	- ...



DIGITAL PANEL METERS
SECTION SPECIAL
SPECIAL INSTRUMENTS

SERIES BAR



Digits	Led bar
Led	30 segments
Color	Red
Reading	0/100% horizontal 0/100% vertical
Frontal	96x48mm 96x24mm
Mounting	Panel
Power	U (20-240Vdc, 60-240Vac, ±10%) 24Vdc ±10%
Output and control options	Relay outputs (1 to 2) Analog output
Accessories	Wall mount housing DIN rail mount Benchtop housing Adapter 96x96mm Labeling units (included)
Main features models MBR	Section "Special" Led bar Reading up to 5 meters Front keypad configuration Optional relay and analog outputs Isolated circuits Front protection IP65 Function 'Fast access' Function 'Password' Internal modular architecture Plug-in screw terminals
Main features models EBR	Section "Special" Led bar Reading up to 5 meters Rear keypad configuration Isolated circuits Front protection IP52 Plug-in screw terminals
Main function / Input signal	For Process For Potentiometers

The Series BAR is a range of panel meters with the differential feature of bar reading format. It mounts a 30 segments led bar, available in red color. Models MBR can mount optional relay outputs and analog output retransmission.

The Series BAR is designed for industrial applications where there is a need to visualize in a fast way, the measure of a level, a pressure or similar signal. These meters provide a clean and sharp reading thanks to the specially adapted front lens.

In short, the Series BAR is a complete range of bar meters with universal power supply, perfect for industrial applications of level measurement and visualization.



MODELS

Model	MBR	EBR
Main function	FOR PROCESS FOR POTENTIOMETERS  	FOR PROCESS 
Ranges	4/20mA, 0/10Vdc, ±20mA, ±10Vdc	4/20mA, 0/10Vdc, ±20mA, ±10Vdc
Digits	30 segments	30 segments
Reading	0/100%	0/100%
Color del led	Red	Red
Mounting	Horizontal or vertical	Horizontal or vertical
Format	96x48mm	96x24mm
Channels	1	1
Excitation voltage	+15Vdc (max. 30 mA)	---
Notes	Scalable reading	Scalable reading
Total error	<0.5% FS	<0.5% FS
Thermal drift	<150ppm	<150ppm
Step response	<250Sec.	<250Sec.
Acquisitions	3/second	3/second
Power	U (20-240Vdc, 60-240Vdc, ±10%)	24 ±10%
Consumption	<2,5W	<2W
Isolation	1500Veff (60 segundos)	1500Vdc (60 segundos)
Protection	IP65 front	IP52 front
Output options	Maximum 2	---
Labeling units	Yes	No
Configuration	Front keypad	Rear keypad
Mounting	Panel	Panel
Weight	<150gr.	<150gr.
Depth	91 mm (includes terminals)	70mm (includes terminals)

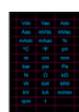
OUTPUT AND CONTROL OPTIONS - MODELS MBR

Option	A1	A2	M1	
Main function	1 RELAY OUTPUT 	1 RELAY OUTPUT 	1 ANALOG OUTPUT 	
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	3 terminals (NC, NO, common) 250Vac, max. 8A	Output in 4/20mA	
Isolation	Yes, 3500Veff	Yes, 3500Veff	Yes, 1000Vdc	
Installable at	Option1	Option2	Option1	
Notes	For 2 relay outputs, install A1 and A2	Needs a module installed at option 1		

ACCESSORIES - MODELS MBR

MODEL AND ACCESSORIES SERIES BAR

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 for additional mechanical and IP65 front 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.

Option	LABEL UNITS 7			
Main function	LABEL WITH PRINTED UNITS (INCLUDED WITH C40-D) 			
Notes	Labeling with printed units : "Vdc", "Vac", "Adc", "Aac", "mAdc", "mAac", "%", "°C", "°F", "pH", "m", "cm", "mm", "bar", "psi", "Pa", "N", "Ω", "KΩ", "W", "KW", "MW", "KV", "KA", "m/min", "RPM", "l" and " ".			

How to order

Model	Power	Option1	Option2*	Customization
MBR	U	A1	A2	
	- U	- A1 - M1 - (empty)	- A2 - (empty)	- XXXX (customized execution)

*Note: Option2 needs Option1 installed.

Model	Customization
EBR	
	- XXXX (customized execution)



Digits	4
Digit height	14mm
Color	Red
Reading	9999/-1999
Frontal	96x48mm
Mounting	Panel
Power	U (18-265Vac/dc)
Output and control options	Relay outputs (1 to 2) Analog output Modbus RTU
Accessories	---
Main features	UL listed Multi signal Reading up to 5 meters Front keypad configuration Optional relay, analog and serial outputs Protection IP50/IP65 Plug-in screw terminals High quality front lens Function 'ECO' Function 'Fast access' Function 'External control'
Main function / Input signal	For Process For Pt100, Pt500, Pt1000, Ni100, Ni200, Ni1000, PTC, NTC and Thermocouples K J E N L C R S B T AC Voltmeter up to 600Vac DC Voltmeter up to $\pm 600Vdc$ Frequency meter for AC power lines AC Ammeter up to 5Aac DC Ammeter up to $\pm 5Adc$ For Resistances For Potentiometers

The Series UL is a set of instruments designed for applications that need conformity to UL standards (Underwrites Laboratories). All instruments from this series are lists UL and have its UL file number available at the UL web site.

The C42-D instruments are digital panel meters, that can acquire and display a wide range of analog input signals, including AC and DC voltage and current signals up to 600V and 5A, process, Pt100, thermocouples, resistances, potentiometers and others.

The C42-D instruments can be directly powered from any power supply that provides a voltage between 18 and 265 Vac/dc.

Versions available that include relay outputs, analog outputs for signal retransmission, and communication with Modbus RTU protocol.



MODELS

Model	C42-D
Main function	MULTI SIGNAL PANEL METER
Ranges	AC voltages up to ~600Vac DC voltages up to ±600Vdc Frequency meter up to 100Hz AC currents up to 5Aac DC currents up to ±5Adc 4/20mA, 0/10Vdc PT100 (2 and 3 wireS), PT500, PT1000, Ni100, Ni200, Ni1000, PTC, NTC Thermocouples K J E N L C R S B T Resistances Potentiometers
Digits	4
Reading	9999/-1999
Digit height	14mm
Channels	1
Excitation voltage	15 Vdc (max 30 mA)
Notes	AC measures in True RMS
Total error	<0,2%depends on selected input range
Thermal drift	<150ppm/°
Step response	<300mSec.
Acquisitions	3/second
Power	U (18-265Vac/dc)
Consumption	<1,5W meter only (<0.3W with 'ECO') <2,5W with options (<1.5W with 'ECO')
Isolation	15000Veff (60 seconds)
Protection	front IP65
Output options	Maximum 2
Labeling units	Yes
Configuration	Frontal keypad and internal jumpers
Mounting	Panel
Weight	<150gr.
Depth	91 mm (including terminals)

OUTPUT AND CONTROL OPTIONS

Option	A1	A2	M1	S1
Main function	1 RELAY OUTPUT	1 RELAY OUTPUT	1 ANALOG OUTPUT	1 MODBUS RTU SERIAL OUTPUT
				
Characteristics	3 terminals (NC, NO, common) 250Vac, max. 8A	3 terminals (NC, NO, common) 250Vac, max. 8A	Output in 4/20mA	Up to 9600bps
Isolation	Yes, 3500Veff	Yes, 3500Veff	Yes, 1000Vdc	Yes, 1000Vdc
Installable at	Option1	Option2	Option1	Option1
Notes	For 2 relay outputs, install A1 and A2	Needs a module installed at option 1		

How to order

Reference	Description
C42-D-U	Panel meter
C42-D-U-A1	Panel meter with 1 relay output
C42-D-U-A1-A2	Panel meter with 2 relay output
C42-D-U-M1	Panel meter with 1 analog output
C42-D-U-M1-A2	Panel meter with 1 analog output and 1 relay output
C42-D-U-S1	Panel meter with 1 Modbus RTU communications
C42-D-U-S1-A2	Panel meter with 1 Modbus RTU communications and 1 relay output





Digits	4
Digit height	14mm
Color	Red
Reading	9999/-1999
Frontal	96x48mm
Mounting	Panel
Power	Loop powered
Output and control options	---
Accessories	Wall mount housing DIN rail mount Benchtop housing Adapter 96x96mm
Main features	Section Special For 4/20mA process signals Configurable from front keypad Protection IP65 Isolated circuits Scalable reading Memory of max. and min. Function 'measure' Function 'square root' Function 'field correction' Display filters Dimplified scaling Function 'password'
Main function / Input signal	Loop powered meter For 4/20mA process signals

The LP4 is a special instrument designed to read process signals and power itself from the input signal loop .

The instrument provides a clear reading with 7 segment red color led displays, far away from standard LCD screens usual in loop powered units.

The LP4 can be mounted into existing 4/20mA loops by inserting the LP4 into the loop, or into new signal loops.

Powered from the loop, it can provide local reading in locations where independent power supplies are not available.



MODELS

Model	LP4
Main function	LOOP POWERED
	
Ranges	4/20mA process signals
Digits	4
Reading	9999/-1999
Digit height	14mm
Channels	1
Excitation voltage	no
Notes	Loop powered
Total error	<0.1%
Thermal drift	<150ppm/°
Display refresh	2/second
Power	Loop powered
Voltage drop at terminals	<11Vdc
Protection	IP50 standard (IP65 optional)
Output and control options	---
Labeling units	Yes
Configuration	Frontal keypad
Mounting	Panel (optional Wall)
Weight	<150gr.
Depth	91mm (including terminals)

OTHER OPTIONS

Option	NBT		
Main function	WITHOUT FRONT KEYPAD		
Characteristics			
Notes	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.		

ACCESSORIES

MODELS, OPTIONS, AND ACCESSORIES

LP4

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 for additional mechanical and IP65 front 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.



How to order

Model	Others	Customization
LP4	- - NBT - 65 (empty)	- - XXXX (customized execution)

EM60-TH



Digits	6
Digit height	14mm
Color	Red
Reading	999999/-199999 RPM 99.23.59 days or 99.59.59 hours
Frontal	96x48mm
Mounting	Panel
Power	H (85-265 Vac/dc) L (11-60 Vdc and 24/48Vac)
Output and control options	Relay outputs
Accessories	Wall mount housing DIN rail mount Benchtop housing Adapter 96x96mm
Main features	Section Special Impulse signals (NPN, PNP, ...) for RPM reading Internal time counter with alarm to manage preventive maintenances. Configurable from front keypad Protection IP65 Isolated circuits
Main function / Input signal	NPN and PNP with 2 and 3 wires Includes excitation voltage 2 relay outputs to signal excessive speed and / or maintenance time reached

The EM60-TH is a special instrument designed to perform 2 functions :

- visualize the actual RPM (revolutions per minute) of a motor, from a NPN or PNP signal
- accumulate the total time the motor has been in function

The instrument can mount up to two relays, associated to the RPM measured value, and an optional relay associated to the time accumulated.

A front button and a rear contact is available to perform the switch between RPM and TIME values.

In short, the EM60-TH is an instrument ideal for applications that need a preventive maintenance based on working elapsed time.



MODELS

Model	EM60-TH
Main function	RATEMETER WITH TIMER
Ranges	Impulse signals (NPN, PNP, ...) for RPM reading Internal time counter with alarm to manage preventive maintenances.
Digits	6
Reading	999999/-199999 RPM 99.23.59 days or 99.59.59 hours
Digit height	14mm
Channels	1
Excitation voltage	18 Vdc (max 70 mA)
Notes	Control to switch between RPM and elapsed time reading
Total error	<0,2% depends on selected input range
Thermal drift	<150ppm/°
Max. frequency	up to 500KHz
Min. frequency	from 1Hz
Display refresh	15/second
Power	H (85-265 Vac/dc) L (11-60 Vdc and 24/48 Vac)
Consumption	<4W
Isolation	15000Veff (60 seconds)
Protection	IP65
Output and control options	2 relay outputs
Labeling units	Yes
Configuration	Frontal keypad
Mounting	Panel (optional Wall)
Weight	<150gr.
Depth	91mm (including terminals)

OUTPUT AND CONTROL OPTIONS

Option	INCLUDED	INCLUDED	
Main function	4 RELAY OUTPUT	1 ANALOG OUTPUT	
Characteristics	2 terminals (NO, common) 250Vac, max. 8A	Output in 4/20mA	
Isolation	Yes, 3500Veff	Yes, 1000Vdc	
Notes			

OTHER OPTIONS

Option	NBT		
Main function	WITHOUT FRONT KEYPAD		
Characteristics			
Notes	The front keypad is not accessible to the operator. To access the keypad, uninstall the instrument from the panel, and remove the front filter.		

ACCESSORIES

EM60-TH

MODELS, OPTIONS, AND ACCESSORIES

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 for additional mechanical and IP65 front 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.



How to order

Model	Power	Option1	Option2
EM60-TH	H - H (85-265Vac/dc) - L (11-60Vdc and 24/48Vac)	R1	R1

SERIES RD



Digits	2,3,4,5
Digit height	14mm
Color	Red
Reading	99999/-9999 9999/-9999 999/-999 99/-99
Frontal	96x48mm
Mounting	Panel
Power	0 (230Vac) 1 (115Vac) 6 (15-30Vdc)
Output and control options	- - -
Accessories	Adapter 96x96mm Labeling units
Main features	Reading up to 5 meters For parallel BCD code Plug-in screw terminals High quality front lens
Main function / Input signal	For parallel BCD code

The Series RD is a range of digital panel meters, with 2, 3, 4 or 5 digits, designed to be controlled by a parallel or multiplexed BCD code.

Available in standard 96x48mm housing it mounts the standard 14mm digit height, providing 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 Series RD mounts SUB-D terminal for signal connections, a housing specifically designed at FEMA, a patented panel fixation and front labeling units with high quality industrial adhesive.

MODELS

Model	RD50	RD40	RD40S
Main function	PARALLEL BCD CODE REPEATER 	PARALLEL BCD CODE REPEATER 	PARALLEL BCD CODE REPEATER 
Signals	Parallel BCD/Multiplexed BCD	Parallel BCD/Multiplexed BCD	Parallel BCD/Multiplexed BCD
Digits	5	4	4 and negative sign
Reading	99999/0	9999/0	9999/-9999
Digit height	14mm	14mm	14mm
Notes	Independent 'Hold' for each digit	Independent 'Hold' for each digit	Independent 'Hold' for each digit
Power	0 (230Vac) 1 (115Vac) 6 (15 to 30Vdc isolated)	0 (230Vac) 1 (115Vac) 6 (15 to 30Vdc isolated)	0 (230Vac) 1 (115Vac) 6 (15 to 30Vdc isolated)
Thermal drift	---	---	---
Consumption	<3,5W	<3,5W	<3,5W
Isolation	2000Veff (Power AC) 500V (Power DC)	2000Veff (Power AC) 500V (Power DC)	2000Veff (Power AC) 500V (Power DC)
Protection	IP40	IP40	IP40
Output and control options	---	---	---
Labeling units	Indicate in the order	Indicate in the order	Indicate in the order
Configuration	---	---	---
Mounting	Panel	Panel	Panel
Weight	<350gr.	<350gr.	<350gr.
Depth	152mm	152mm	152mm

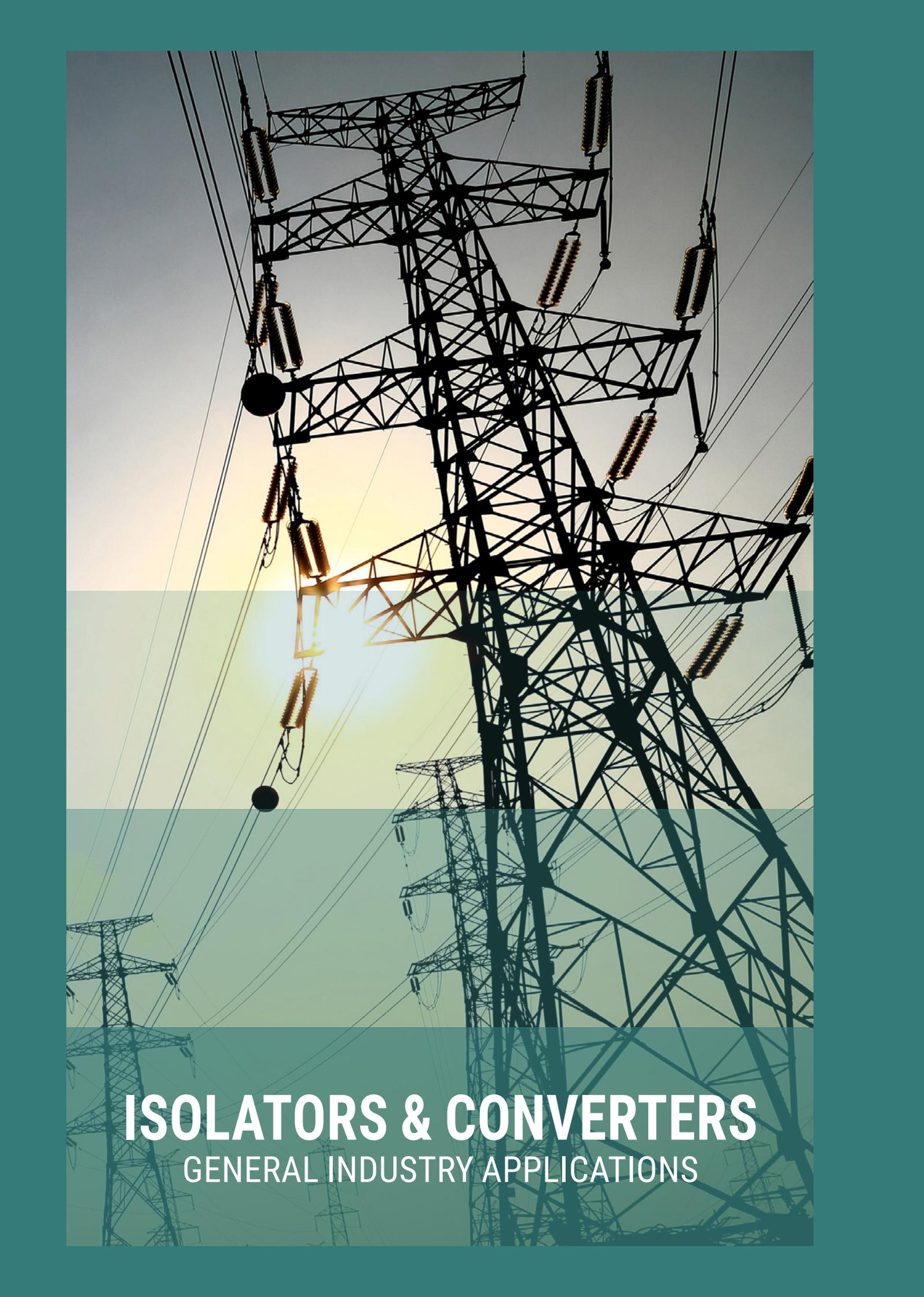
MODELS AND REFERENCES

SERIES RD

RD30	RD30S	RD20	RD20S
PARALLEL BCD CODE REPEATER			
			
Parallel BCD/Multiplexed BCD	Parallel BCD/Multiplexed BCD	Parallel BCD/Multiplexed BCD	Parallel BCD/Multiplexed BCD
3	3 and negative sign	2	2 and negative sign
999/0	999/-999	99/0	99/-99
14mm	14mm	14mm	14mm
Independent 'Hold' for each digit			
0 (230Vac) 1 (115Vac) 6 (15 to 30Vdc isolated)			
---	---	---	---
<3,5W	<3,5W	<3,5W	<3,5W
2000Veff (Power AC) 500V (Power DC)			
IP40	IP40	IP40	IP40
---	---	---	---
Indicate in the order			
---	---	---	---
Panel	Panel	Panel	Panel
<350gr.	<350gr.	<350gr.	<350gr.
152mm	152mm	152mm	152mm

How to order

	Model	Power
RD	50	0
	- 50	- 0 (230Vac)
	- 40	- 1 (115Vac)
	- 40S	- 6 (15 to 30Vdc isolated)
	- 30	
	- 30S	
	- 20	
	- 20S	



ISOLATORS & CONVERTERS

GENERAL INDUSTRY APPLICATIONS

SERIES I4

MODELS AND REFERENCES



Output signal	4/20mA, 0/10Vdc, and others
Mounting	DIN rail
Power	U (18-265 Vac/dc)
Main features	<p>Multisignal instrument</p> <p>Isolated input-output-power</p> <p>Easy configuration with predefined codes</p> <p>Configuration menu for advanced configuration</p> <p>Configuration from front key pad</p>
Models	<p>I4E for electrical signals (AC voltages, DC voltages, AC currents, DC currents and power frequency)</p> <p>I4P for process 4/20mA and 0/10Vdc, temperatures for Pt100, Pt500 and Pt1000, thermocouples J, K, N, E, T, R, S, C and B, NTC sensors, resistances and potentiometers</p> <p>I4L for load cells and millivolt signals</p>

The Series I4 is a series of isolated signal converters and isolators, for all type of industrial applications.

The differential features are the wide range variety of input signals accepted, with an increased accuracy and speed compared to other OEM series.

Provides signal conversion from wide range of signals to standard process 4/20mA and 0/10Vdc, including a output signal generation function to enable testing of remote systems during installation.

Configuration is easy by using predefined configuration codes. Advanced configuration is available with a 'configuration menu'. Use the front key pad to access the configuration menu.

Internal tools to make installation easy (force functions, SOS function, messages on display, ...)

High 3000V isolation provided between input, output and power circuits.

Fully configurable, accepts can be configured to any desired input and output signal that falls within the available ranges.

Mounts plug-in screw terminals for safe connections, a housing specifically designed at FEMA, and a practical standard DIN rail fixation.

The high isolation provided makes a recommended instrument to protect the PLC inputs and remote instrumentation against overvoltages, ground loops, and electrical spurious.

In short, the Series I4 is a common use for industrial applications, with the aim of signal conversion and signal isolation.



Model	I4E	I4P	I4L
Main Function	SIGNAL CONVERTER SIGNAL ISOLATOR	SIGNAL CONVERTER SIGNAL ISOLATOR	SIGNAL CONVERTER SIGNAL ISOLATOR
	  	  	  
Input signals	FOR AC AND DC VOLTAGES FOR AC AND DC CURRENTS FOR POWER FREQUENCY	FOR PROCESS FOR TEMPERATURES RESISTANCES AND POTENTIOMETERS	FOR LOAD CELLS FOR MILLIVOLTS
Input ranges	from 0/50mVac to 0/600Vac from 0/5mAac to 0/5Aac from 0/50mVdc to 0/600Vdc (bipolar ranges from ± 50 mVdc to ± 600 Vdc) from 0/5mAdc to 0/5Adc (bipolar ranges from ± 5 mAdc to ± 5 Adc) from 0 to 100Hz	4/20mA and 0/10Vdc Pt100, Pt500 and Pt1000 thermocouples J, K, N, E, T, R, S, C and B NTC sensors 44004, 44005, 44006, 44007, 44008, 44030, 44031, 44032, 44033, 440034 and NTC configurable resistances from 0/1KOhm to 0/1M0hm potentiometers	load cells ranges from 0/5mV up to 0/80mV load cell bipolar ranges from ± 5 mV up to ± 80 mV millivolt ranges from 0/5mV up to 0/80mV millivolt bipolar ranges from ± 5 mV up to ± 80 mV
Output ranges	4/20mA, 0/10Vdc and others	4/20mA, 0/10Vdc and others	4/20mA, 0/10Vdc and others
Channels	1	1	1
Excitation voltage	---	+15Vdc (max. 30mA)	+5Vdc (max. 60mA)
Notes	---	---	includes sense function
Total error	<0,3% y <0,2% typical	<0,10% to <0,5% typical, depends on signal	<0,10% to <0,05% typical, depends on range
Thermal drift	150ppm	150ppm	75ppm to 150ppm, depends on range
Step response	<90mSec. to <300mSec.	<60mSec. for process	<115mSec. to <300mSec.
Power	U (18-265 Vac/dc)	U (18-265 Vac/dc)	U (18-265 Vac/dc)
Consumption	<1.5W	<3.0W	<3.0W
Isolation Input/Output	3000Veff (50Hz) (1 minute) 3 ways input - output - power	3000Veff (50Hz) (1 minute) 3 ways input - output - power	3000Veff (50Hz) (1 minute) 3 ways input - output - power
Protection	IP30	IP30	IP30
Particular functions of this model	Function to force signal output in mA or Vdc to high or low levels, to evaluate remote systems during installation Function 'SOS' Function 'messages' ...	Function to force signal output in mA or Vdc to high or low levels, to evaluate remote systems during installation Function 'SOS' Function 'messages' ...	Function to force signal output in mA or Vdc to high or low levels, to evaluate remote systems during installation Function 'SOS' Function 'messages' ...
Configuration	Fast configuration with predefined codes Advanced configuration with ' <i>configuration menu</i> ' Configuration from front key pad	Fast configuration with predefined codes Advanced configuration with ' <i>configuration menu</i> ' Configuration from front key pad	Fast configuration with predefined codes Advanced configuration with ' <i>configuration menu</i> ' Configuration from front key pad
Mounting	DIN rail	DIN rail	DIN rail
Weight	<150gr.	<150gr.	<150gr.



How to order

Model

Customization

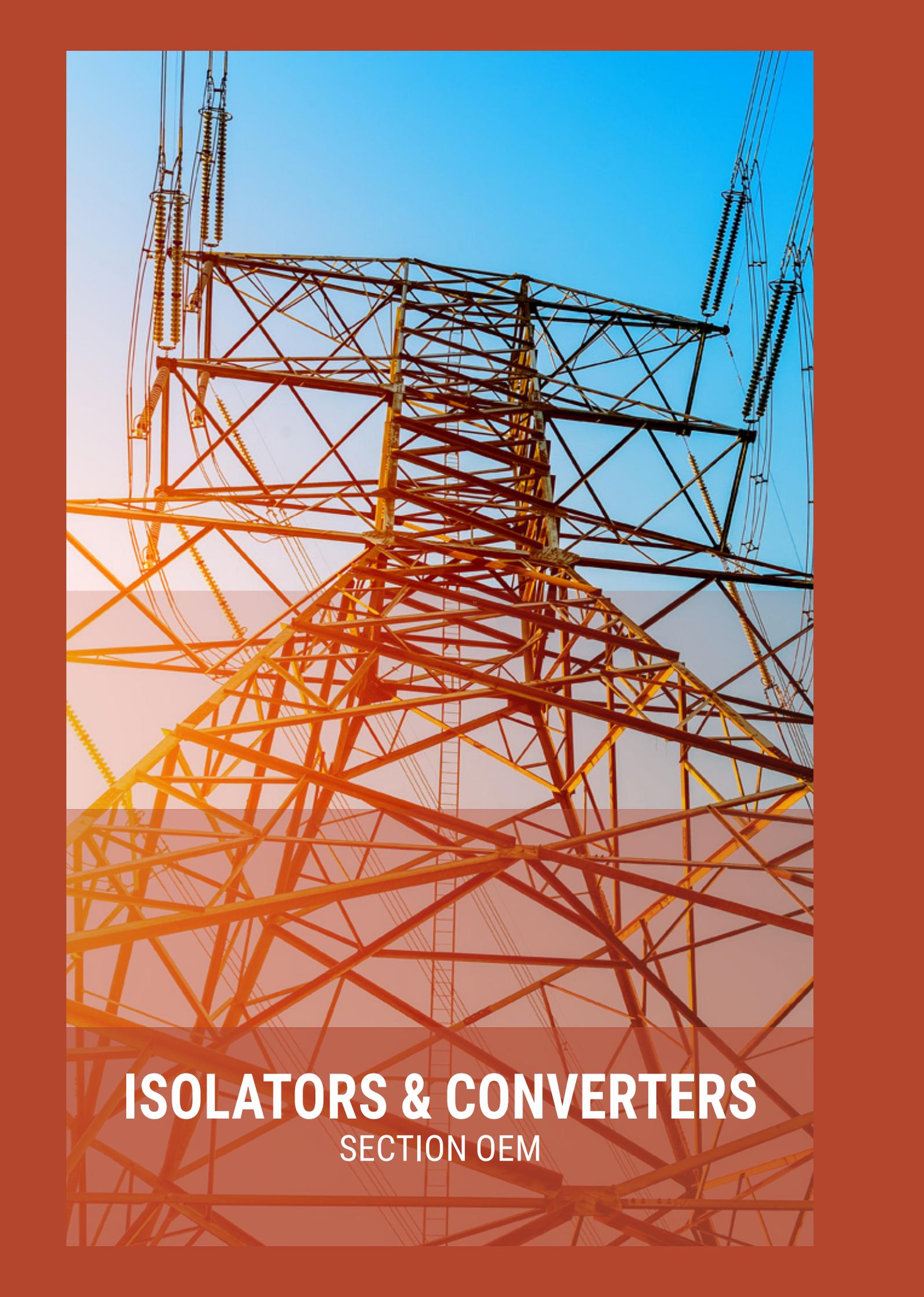
I4E

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I4E

I4P

I4L



ISOLATORS & CONVERTERS

SECTION OEM

SERIES I3



Output signal	4/20mA, 0/10Vdc, ...
Mounting	DIN rail
Power	U (18-265 Vac/dc) U (20 to 240 Vdc \pm 10%, 60 to 240 Vac \pm 10%)
Main features	Signal converter Signal isolator Signal duplicator Isolated 3 and 4 ways Multisignal instrument For process, temperatures, resistances and potentiometers Easy configuration with codes Configuration system hidden behind the front cover
Models	1 single model for : - Process - Pt100, Pt500, Pt100 - Thermocouples J, K, N, E, T, R, S - Ni100, Ni1000 - NTC - Potentiometers - Resistances

The Series I3 is made of I3P of isolated signal converter, for all type of industrial applications, and I3D as signal duplicator for process signals.

The differential features for I3P are the variety of input signals accepted with a single instrument, and the easy configuration system, using codes.

The differential features for I3D is the dual output, with isolation 4 ways, and the easy configuration system, using codes.

High isolation provided between input, output and power circuits.

The I3P provides signal conversion from wide range of signals to standard process 4/20 mA and 0/10Vdc, including a output signal generation function to enable testing of remote systems during installation.

The Series I3 mounts plug-in screw terminals for safe connections, a housing specifically designed at FEMA, and a practical standard DIN rail fixation.

The high isolation provided makes a recommended instrument to protect the PLC inputs and remote instrumentation against overvoltages, ground loops, and electrical spurious.

In short, the Series I3 is a common use range of instrument, for industrial applications, with the aim of signal conversion and signal isolation.

Model	I3P	I3D
Main Function	SIGNAL CONVERTER SIGNAL ISOLATOR	SIGNAL DUPLICATOR
	   	
Input signals	FOR PROCESS FOR TEMPERATURE (PT100, THERMOCOUPLES, NTC, ...) FOR RESISTANCES FOR POTENTIOMETERS	FOR PROCESS
Input ranges	4/20mA, 0/10Vdc Thermocouples J, K, N, E, T, R, S Pt100, Pt500, Pt1000 Ni100, Ni1000 NTC (44006), NTC (R ₂₅ =10K, BETA=3500) Resistances Potentiometers	4/20mA, 0/10Vdc
Output ranges	4/20mA, 0/10Vdc	2 outputs output 1 is 4/20 mA (active or passive) output 2 is 4/20 mA (active or passive)
Channels	1	2
Excitation voltage	+15Vdc (máx. 30mA)	+15Vdc (máx. 25mA)
Notes	- - -	- - -
Total error	<0,3% typical	<0,3% typical
Thermal drift	150ppm	150ppm
Step response	<300mSec.	<300mSec.
Power	U (18-265 Vac/dc)	20 to 240 Vdc ±10%, isolated 60 to 240 Vac ±10%, isolated
Consumption	<1.5W	<4.5W
Isolation Input/Output	2300Veff (50Hz) (1 minute)	between all circuits 2300 Veff (60 seconds) except input - output 2 1500 Vdc (60 seconds)
Isolation Power/Input	2300Veff (50Hz) (1 minute)	
Isolation Power/Output	2300Veff (50Hz) (1 minute)	
Protection	IP30	IP30
Particular functions of this model	Function to force signal output in mA or Vdc to high or low levels, to evaluate remote systems during installation	- - -
Configuration	Configuration by codes, system accessible behind the front cover	Configuration by codes, system accessible behind the front cover
Mounting	DIN rail	DIN rail
Weight	<150gr.	<150gr.

How to order

Model

Customization

I3P

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I3D

.xxxx

I3P

SERIES CCT-100



Output signal	Same as input signal
Mounting	DIN rail
Power	Loop powered
Main features	Section OEM Loop powered from the input loop Does not need configuration
Models	For process in mA

The Instrument CCT-100 is a simple but effective signal isolator. It is designed for common industrial applications where there is a need to isolate a current loop.

By its own nature, the instrument CCT-100 does not need any type of configuration, and is powered from the input signal loop. Simply install on the DIN rail, and connect the input and output terminals. The output current will be the same as the input current, plus an isolation between them.

With a competitive price, the instrument CCT-100 still provides a very good 2000Veff isolation level between input and output circuits. Without doubt, an ideal instrument for easy isolation on industrial applications.

MODELS

Model	CCT-100
Input signals	FOR PROCESS 
Input ranges	0/50mA
Output ranges	0/50mA
Channels	1
Input:Output relation	1:1
Notes	Loop powered isolator
Total error	<0,1%
Thermal drift	100ppm
Step response	<50mSec.
Power	Loop powered from the input loop
Input voltage drop	$3V + mA \times Z_L$
Isolation input/output	2000Veff (50Hz) (1 minute)
Protection	IP20
Configuration	- - -
Mounting	DIN rail
Weight	<100gr.

SERIES CCT-100

How to order

CCT-100



ISOLATORS & CONVERTERS

SECTION SPECIAL

SERIES CCT-55



Output signal	Frequency
Mounting	DIN rail
Power	0 (230Vac) 1 (115Vac) 6 (24Vdc isolated)
Main features	Process to frequency converter Input in mA or Vdc Frequency output Isolated circuits, 3 way isolation High isolation levels
Models	For process in mA and Vdc

The instruments CCT-55I and CCT-55V are two references for process to frequency signal conversion.

They accept inputs in 4/20mA, 0/10Vdc and similar signals, and offer a wide range of frequency output signals, configurable from as low as few impulses per hour, up to a 10.000 impulses per second.

Oriented to flow applications, these instruments also provide an interesting 2000Veff isolation between input, output and power circuits.

The CCT-55 is designed for DIN rail mount and is provided with the input and output range requested by the customer.

Model	CCT-55I	CCT-55V
Input signals	mA TO FREQUENCY CONVERTER 	VDC TO FREQUENCY CONVERTER 
Input ranges	4/20mA, 0/20mA, 0/50mA, ...	0/650Vdc, 0/100Vdc, 0/10Vdc, 0/1Vdc, 0/100mVdc
Output ranges	Any frequency range from 0/2.15 pulses/hour up to 0/10.000Hz	Any frequency range from 0/2.15 pulses/hour up to 0/10.000Hz
Channels	1	1
Excitation voltage	+24Vdc (max. 25mA)	---
Notes	---	---
Total error	<0,2%	<0,2%
Thermal drift	200ppm	200ppm
Step response	<250mSec.	<250mSec.
Power	0 (230Vac) 1 (115Vac) 6 (24Vdc isolated)	0 (230Vac) 1 (115Vac) 6 (24Vdc isolated)
Consumption	<1,2W	<1,2W
Isolation Input/Output	3500Veff (50Hz) (1 minute)	3500Veff (50Hz) (1 minute)
Isolation Power/Input	3500Veff (50Hz) (1 minute)	3500Veff (50Hz) (1 minute)
Isolation Power/Output	3500Veff (50Hz) (1 minute) in AC 1000Veff (50Hz) (1 minute) In DC	3500Veff (50Hz) (1 minute) in AC 1000Veff (50Hz) (1 minute) In DC
Protection	IP30	IP30
Particular functions of this model	Readjustable by potentiometers	Readjustable by potentiometers
Configuration	By jumpers and potentiometers	By jumpers and potentiometers
Mounting	DIN rail	DIN rail
Weight	<300gr.	<300gr.

How to order

CCT	Model	Power	Input signal	Output signal
-	55I	6	0/10Vdc	0/10.000Hz
-	55I	0 (230Vac)	4/20mA	0/1000Hz
-	55V	1 (115Vac)	0/650Vdc	0/900Hz
-		6 (24Vdc isolated)		...

TERMS AND CONDITIONS

1. Standard 2 years warranty

All instruments manufactured by FEMA ELECTRÓNICA, S.A. are covered by a standard 2 year warranty against all manufacturing defects, as requested by the actual european legislation. This warranty starts to apply at date of shipment. This warranty does not apply in case of misuse, accident, or manipulation by non authorized personnel. Within the warranty period and after examination by the manufacturer, the unit will be repaired or replaced when found to be defective. The scope of this warranty is limited to the repair cost of the instrument, not being the manufacturer eligible for responsibility on additional damages or costs. The warranty is detailed in the user's manual of each instrument.

2. Extended 5 years warranty

FEMA ELECTRÓNICA, S.A. offers to his customers a free warranty extension from 2 to 5 years at no additional cost. To activate the Extended Warranty, access the following link accessible at FEMA web site and fill the form for each instrument : <http://www.fema.es/garantia.asp?idioma=en>. Your contact details will be used exclusively by FEMA ELECTRÓNICA, to keep you informed of news and special offers for customers.

3. Your opinion is important for us

At FEMA ELECTRÓNICA, S.A. we highly value the comments and feedback from our customers. If you have a suggestion or comment related to our products or services, you have a dedicated web page available to inform us at <http://www.fema.es/calidad.asp?idioma=en>. We really appreciate your comments and the dedicated time.

4. Precautions on installation

This instrument has been designed and verified conforming to the 61010-1 CE Security Regulation, for industrial applications. Installation of this instrument must be performed by qualified personnel only. This manual contains the appropriate information for the installation. Using the instrument in ways not specified by the manufacturer may lead to a reduction of the specified protection level. Disconnect the instrument from power before starting any maintenance and / or installation action.

The instrument does not have a general switch and will start operation as soon as power is connected. The instrument does not have protection fuse, the fuse must be added during installation.

The instrument is designed to be panel mounted. An appropriate ventilation of the instrument must be assured. Do not expose the instrument to excess of humidity. Maintain clean by using a humid rag and do NOT use abrasive products such as alcohols, solvents, etc.

General recommendations for electrical installations apply, and for proper functionality we recommend : if possible, install the instrument far from electrical noise or magnetic field generators such as power relays, electrical motors, speed variators, ... If possible, do not install along the same conduits power cables (power, motor controllers, electrovalves, ...) together with signal and/or control cables.

Before proceeding to the power connection, verify that the voltage level available matches the power levels indicated in the label on the instrument.

In case of fire, disconnect the instrument from the power line, fire alarm according to local rules, disconnect the air conditioning, attack fire with carbonic snow, never with water.

5. Right to modify

The information included in this document is subject to change without notice. FEMA ELECTRÓNICA, S.A. reserves the right to apply any changes, updates and modifications it deems appropriate about any information on this document.

FEMA ELECTRÓNICA, S.A. is committed to correct any formal or numerical errors that may be found in this document, as soon as it has been formerly informed about them.

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