

Multifunction process calibrators // for electrical signals



MC 75.2

Your advantages

Type

MC 75.2

- Highest accuracy & Data logger
- Generation of RTD-, TC-, mA- and V signals as well as frequency and pulses
- Connection of pressure modules possible

Technical data

Type

MC 75.2

resistance thermometers (RTD)

Generation and measurement of RTD signals

Pt50, Pt100, Pt200, Pt500, Pt1000, Cu10, Cu50, Ni100, Ni120, Ni1000

Ω -generator function

0...4000 Ω

Ω -measurement function

0...4000 Ω

Accuracy (of reading + const.)

$\pm 0.012\%$

Selectable temperature unit

$^{\circ}\text{C} / ^{\circ}\text{F}$

Measurement of multi-wire connections

2 / 3 / 4

Thermocouples (TC)

Generation and measurement of TC signals

J, K, T, R, S, B, N, E, U, L

mV-generator function

0...100 mV

mV-measurement function

0...100 mV

Accuracy (of reading + const.)

$\pm 0.013\%$

Selectable temperature unit

$^{\circ}\text{C} / ^{\circ}\text{F}$

Internal comparison point

$\pm 0.3\text{ }^{\circ}\text{C}$

Current (mA)

Loop current signal generation

0(4)...24 mA

Loop current signal measurement

0(4)...50 mA

Accuracy (of reading + const.)

$\pm 0.0175\%$

Current loop supply

24 V $\pm 10\%$, 22 mA

HART Communication protective resistor

250 Ω

Voltage (V)

Voltage signal generation

0...20 V

Voltage signal measurement

0...50 V

Accuracy (of reading + const.)

$\pm 0.015\%$

Type	MC 75.2
Continuity (O/C)	
Continuity measurement	O / C
Switching threshold „open“	1 kΩ
Frequency and pulse (Hz)	
Frequency and pulse signal generation	0.01 Hz...10 kHz
Frequency and pulse signal measurement	0.01 Hz...20 kHz
Accuracy (of reading + const.)	±0.005 %
Pressure signals (bar)	
Pressure measurement with external pressure module	✓
Editable pressure units	✓
Connection via DIN socket	5-pin

Functions	
Type	MC 75.2
Generation	
High-speed call values	10 points (flexible)
Linear steps and ramps	✓
User-defined synthesiser values	100
User-defined signal output characteristic	10 points
Editable units	✓
Transmitter function simulation	✓
Measurement	
Data memory	10 000 values
Value tables and graphics function	✓
Offset programming for sensor characteristic	✓
Calibration data files and linearisation points	5 x 4 values
User-defined measuring input characteristic	10 points
Editable units	✓
Measured value min. / max.	✓
Averaging function	✓

General data	
Type	MC 75.2
Features	
Sensor connection	8 safety sockets (2 channels) incl. push lock, 4 sets with safety instrument leads (4 mm) and alligator clips (optional)
Power supply	Rechargeable battery including power adapter, 230 VAC / 12 VDC
PC Interface	mini-USB Type B
Operator guidance	Menu with pull-down windows Separate channels for parallel signal processing Programming and control via PC
Display	Multifunction display, double-LCD, 2 x 6 digit, illuminated
Housing	
Version	ABS plastic with protective cover
Dimensions	110 x 210 x 50 mm (H x W x D)
Weight	Approx. 900 g

Multifunction process calibrators // for electrical signals

Order code		
Type	Version	Order number
MC 75.2	Accuracy ± 0.0175 % of reading + const.	EME8A0MC075020

Order code	
Accessories	Order number
DAkkS certificate	EKSIMMON00000D
SIKA works calibration certificate	EKSIMMON00000W
Transport case	EME8GKK3100000
Plug connector 4 mm, red	EME8A0SKLS40RT
Plug connector 4 mm, black	EME8A0SKLS40SW
Software Datacal for MC 75.2	EME8A0MCSWDCKA
External pressure module	EME8A0AN601100

External pressure module // for multifunction process calibrator MC 75.2



Ext. pressure module EPM

Technical data

Type	EPM
Pressure range	-1...1000 bar
Measuring rate	400 measurements / sec.
Digital signals	RS 485
Electrical connection	5-pin 1 m shielded connecting cable
Medium temperature	10...40 °C
Pressure connection	G 1/4 stainless steel 1.4404
Degree of protection	IP65
Dimensions	Approx. D = 30 mm, L = 110 mm
Weight	Approx. 140 g

Versions				
Type EPM	Model A	Model B	Model C	
Präzision	±0.05 % full scale	±0.025 % full scale	±0.01 % full scale	Max. pressure range
1	-1...1 bar rel. (PR)			2 bar
	0...1 bar abs. (PAA)			
3	-1...3 bar rel. (PR)			5 bar
	0...3 bar abs. (PAA)			
4	-1...4 bar rel. (PA)	-1...4 bar rel. (PA)		20 bar
	0...4 bar abs. (PAA)	0...4 bar abs. (PAA)		
7	-1...7 bar rel. (PA)	-1...7 bar rel. (PA)		
	0...7 bar abs. (PAA)	0...7 bar abs. (PAA)		
10	-1...10 bar rel. (PR)	-1...10 bar rel. (PA)	-1...10 bar rel. (PA)	
	0...10 bar abs. (PAA)	0...10 bar abs. (PAA)	0...10 bar abs. (PAA)	
12	-1...12 bar rel. (PA)	-1...12 bar rel. (PA)		60 bar
	0...12 bar abs. (PAA)	0...12 bar abs. (PAA)		
20	-1...20 bar rel. (PA)	-1...20 bar rel. (PA)		
	0...20 bar abs. (PAA)	0...20 bar abs. (PAA)		
30	-1...30 bar rel. (PR)	-1...30 bar rel. (PA)	-1...30 bar rel. (PA)	
	0...30 bar abs. (PAA)	0...30 bar abs. (PAA)	0...30 bar abs. (PAA)	
40	-1...40 bar rel. (PA)	-1...40 bar rel. (PA)		200 bar
	0...40 bar abs. (PAA)	0...40 bar abs. (PAA)		
70	0...70 bar rel. (PA)	0...70 bar rel. (PA)		
	0...70 bar abs. (PAA)	0...70 bar abs. (PAA)		
100	0...100 bar rel. (PA)	0...100 bar rel. (PA)	0...100 bar rel. (PA)	
	0...100 bar abs. (PAA)	0...100 bar abs. (PAA)	0...100 bar abs. (PAA)	
120	0...120 bar rel. (PA)	0...120 bar rel. (PA)		400 bar
	0...120 bar abs. (PAA)	0...120 bar abs. (PAA)		
135	0...135 bar rel. (PA)	0...135 bar rel. (PA)		
	0...135 bar abs. (PAA)	0...135 bar abs. (PAA)		
160	0...160 bar rel. (PA)	0...160 bar rel. (PA)		
	0...160 bar abs. (PAA)	0...160 bar abs. (PAA)		
200	0...200 bar rel. (PA)	0...200 bar rel. (PA)		
	0...200 bar abs. (PAA)	0...200 bar abs. (PAA)		
300	0...300 bar rel. (PA)	0...300 bar rel. (PA)	0...300 bar rel. (PA)	
	0...300 bar abs. (PAA)	0...300 bar abs. (PAA)	0...300 bar abs. (PAA)	
400	0...400 bar rel. (PA)	0...400 bar rel. (PA)		1000 bar
	0...400 bar abs. (PAA)	0...400 bar abs. (PAA)		
700	0...700 bar rel. (PA)	0...700 bar rel. (PA)	0...700 bar rel. (PA)	
	0...700 bar abs. (PAA)	0...700 bar abs. (PAA)	0...700 bar abs. (PAA)	
1000	0...1000 bar rel. (PA)	0...1000 bar rel. (PA)	0...1000 bar rel. (PA)	1000 bar
	0...1000 bar abs. (PAA)	0...1000 bar abs. (PAA)	0...1000 bar abs. (PAA)	

PR: Relative pressure measuring cell, ambient pressure as zero point

PAA: Absolute pressure measuring cell, vacuum as zero point

PA: Absolute pressure measuring cell, ambient pressure as zero point

■ Standard pressure ranges

Order code				
Ext. pressure module EPM		EME8A0ACL		
Precision				
0.05% FS			A	
0.025%FS			B	
0.01%FS			C	
Type of pressure				
relativ (PR)			R	
relativ (PA)			R	
absolut (PAA)			A	
Pressure range				
-1(0)...1 bar				0001
-1(0)...3 bar				0003
-1(0)...4 bar				0004
-1(0)...7 bar				0007
-1(0)...10 bar				0010
-1(0)...12 bar				0012
-1(0)...20 bar				0020
-1(0)...30 bar				0030
-1(0)...40 bar				0040
-1(0)...60 bar				0060
0...70 bar				0070
0...100 bar				0100
0...120 bar				0120
0...135 bar				0135
0...160 bar				0160
0...200 bar				0200
0...300 bar				0300
0...400 bar				0400
0...700 bar				0700
0...1000 bar				1000
Example order number		EME8A0ACL	A	R
				0001

PR: Relative pressure measuring cell, ambient pressure as zero point

PAA: Absolute pressure measuring cell, vacuum as zero point

PA: Absolute pressure measuring cell, ambient pressure as zero point

Multifunction process calibrators // for electrical signals



MC 50.2

Your advantages

Type

MC 50.2

- Highest accuracy
- Generation of RTD-, TC-, mA- and V signals as well as frequency and pulses
- For mobile on-site calibration

Technical data

Type	MC 50.2
resistance thermometers (RTD)	
Generation and measurement of RTD signals	Pt50, Pt100, Pt200, Pt500, Pt1000, Cu10, Cu50, Ni100, Ni120, Ni1000
Ω -generator function	0...4000 Ω
Ω -measurement function	0...4000 Ω
Accuracy (of reading + const.)	± 0.012 %
Selectable temperature unit	$^{\circ}\text{C}$ / $^{\circ}\text{F}$
Measurement of multi-wire connections	2 / 3 / 4
Thermocouples (TC)	
Generation and measurement of TC signals	J, K, T, R, S, B, N, E, U, L
mV-generator function	0...100 mV
mV-measurement function	0...100 mV
Accuracy (of reading + const.)	± 0.013 %
Selectable temperature unit	$^{\circ}\text{C}$ / $^{\circ}\text{F}$
Internal comparison point	± 0.3 $^{\circ}\text{C}$
Current (mA)	
Loop current signal generation	0(4)...24 mA
Loop current signal measurement	0(4)...50 mA
Accuracy (of reading + const.)	± 0.0175 %
Current loop supply	24 V ± 10 %, 22 mA
HART Communication protective resistor	250 Ω
Voltage (V)	
Voltage signal generation	0...20 V
Voltage signal measurement	0...50 V
Accuracy (of reading + const.)	± 0.015 %

Type	MC 50.2
Continuity (O/C)	
Continuity measurement	O / C
Switching threshold „open“	1 kΩ
Frequency and pulse (Hz)	
Frequency and pulse signal generation	0.01 Hz...10 kHz
Frequency and pulse signal measurement	0.01 Hz...20 kHz
Accuracy (of reading + const.)	±0.005 %

Functions	
Type	MC 50.2
Generation	
High-speed call values	10 points (flexible)
Linear steps and ramps	✓
User-defined synthesiser values	100
User-defined signal output characteristic	10 points
Editable units	✓
Transmitter function simulation	
Measurement	
Data memory	
Value tables and graphics function	
Offset programming for sensor characteristic	✓
Calibration data files and linearisation points	
User-defined measuring input characteristic	10 points
Editable units	✓
Measured value min. / max.	✓
Averaging function	✓

General data	
Type	MC 50.2
Features	
Sensor connection	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips
Power supply	Rechargeable battery including power adapter, 230 VAC / 12 VDC
PC Interface	mini-USB Type B
Operator guidance	Menu with pull-down windows Separate channels for parallel signal processing Programming and control via PC
Display	Multifunction display, double-LCD, 2 x 6 digit, illuminated
Housing	
Version	ABS plastic with protective cover
Dimensions	110 x 210 x 50 mm (H x W x D)
Weight	Approx. 900 g

Multifunction process calibrators // for electrical signals

Order code		
Type	Version	Order number
MC 50.2	Accuracy ± 0.0175 % of reading + const.	EME8A0MC050200

Order code	
Accessories	Order number
DAkkS certificate	EKSIMMON00000D
SIKA works calibration certificate	EKSIMMON00000W
Transport case	EME8GKK3100000
Plug connector 4 mm, red	EME8A0SKLS40RT
Plug connector 4 mm, black	EME8A0SKLS40SW

Multifunction process calibrators // for electrical signals



EC 10



EC 25

Your advantages

Type

EC 10 / EC 25

- Generation of RTD-, TC- mA- and V signals
- Frequency and pulse simulation (EC25)
- For mobile on-site calibration

Technical data		
Type	EC 10	EC 25
Resistance thermometers (RTD)		
Generation and measurement of RTD signals	Pt100, Pt200, Pt500, Pt1000, Cu10, Cu50	
Ω-generator function	0...4000 Ω	0...40 000 Ω
Ω-measurement function	0...5500 Ω	0...5500 Ω
Accuracy (of reading + const.)	±0.05 %	±0.02 %
Selectable temperature unit	°C / °F	
Measurement of multi-wire connections	2 / 3 / 4	2 / 3
Thermocouples (TC)		
Generation and measurement of TC signals	J, K, T, R, S, B, N, E, U, L	J, K, T, R, S, B, N, E
mV-generator function	-100...1100 mV	-100...110 mV
mV-measurement function	-50...550 mV	
Accuracy (of reading + const.)	±0.02 %	
Selectable temperature unit	°C / °F	
Internal comparison point	±0.5 °C	
Current (mA)		
Loop current signal generation		0...22 mA
Loop current signal measurement		-5...55 mA
Accuracy (of reading + const.)		±0.02 %
Current loop supply		24 V ±10 %, 22 mA
Voltage (V)		
Voltage signal generation		-1...11 V
Voltage signal measurement		-5...55 V
Accuracy (of reading + const.)		±0.02 %

Type	EC 10	EC 25
Continuity (O/C)		
Continuity measurement	0 / C	
Switching threshold „open“	0.5 kΩ	
Frequency and pulse (Hz)		
Frequency and pulse signal generation		3 Hz...110 kHz
Frequency and pulse signal measurement		3 Hz...50 kHz
Accuracy (of reading + const.)		±0.005 %

Functions		
Type	EC 10	EC 25
Generation		
High-speed call values		7 points (fix) in 25 % steps
Linear steps and ramps		✓
Output zero	✓	✓
Transmitter function simulation		✓
Measurement		
Measured value hold function	✓	✓
Averaging function	✓	✓
Room temperature display	✓	✓

General data		
Type	EC 10	EC 25
Features		
Sensor connection	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips	
Power supply	4 x 1.5 V AAA-battery Operating time approx. 25 h with auto-power-off	4 x 1.5 V AAA-battery Operating time approx. 20 h with auto-power-off
PC Interface		
Operator guidance	Keypad	
Display	Multifunction display LCD, 5½ digit, illuminated	Multifunction display double-LCD, 5½ digit, illuminated
Housing		
Version	ABS plastic with protective cover	
Dimensions	210 x 100 x 40 mm (H x W x D)	
Weight	Approx. 550 g	

Multifunction process calibrators // for electrical signals

Order code		
Type	Version	Order number
EC 10	Accuracy ± 0.05 % of reading + const.	EME8VCEC010000
EC 25	Accuracy ± 0.02 % of reading + const.	EME8VCEC025000

Order code	
Accessories	Order number
DAkkS certificate	EKSIMMON00000D
SIKA works calibration certificate	EKSIMMON00000W
Transport case	EME8GKK3100000
Plug connector 4 mm, red	EME8AOSKLS40RT
Plug connector 4 mm, black	EME8AOSKLS40SW

Process calibrators // for thermocouples



EC TC.2



UC TC.2

Your advantages

Type

EC TC.2 / UC TC.2

- Precise simulation and measurement of thermocouple signals
- Simple to use and robust housing
- For mobile on-site calibration

Technical data

Type	EC TC.2	UC TC.2
Thermocouples (TC)		
Generation and measurement of TC signals	J, K, T, R, S, B, N, E	J, K, T, R, S, B, N, E, U, L, C
mV-generator function	-10...1100 mV	-9.5...80 mV
mV-measurement function	-10...110 mV	-10...100 mV
Accuracy (of reading + const.)	±0.05 %	±0.02 %
Selectable temperature unit	°C / °F	°C / °F
Internal comparison point	±0.5 °C	±0.3 °C

Functions		
Type	EC TC.2	UC TC.2
Generation		
High-speed call values		10 points (flexible)
Linear steps and ramps		✓
User-defined synthesiser values		10
User-defined signal output characteristic		10 points
Editable units		✓
Measurement		
Data memory		10 000 values
Value tables and graphics function		✓
Offset programming for sensor characteristic		✓
Calibration data files and linearisation points		5 x 4 values
User-defined measuring input characteristic		10 points
Editable units		✓
Measured value min. / max.		✓
Measured value hold function		✓
Averaging function		✓

General data		
Type	EC TC	UC TC.2
Features		
Sensor connection	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips (optional)
Power supply	1 x 9 V monobloc battery Operating time approx. 25 h with auto-power-off	4 x 1.5 V AA-battery Operating time approx. 40 h or rechargeable battery including power adapter 230 VAC / 12 VDC (optional)
PC Interface		mini-USB Type B
Operator guidance	Keypad	Menu with pull-down windows, programming and control via PC
Display	Multifunction display LCD, 5½ digit	Multifunction display LCD, 6 digit
Housing		
Version	ABS plastic with protective cover	
Dimensions	200 x 100 x 40 mm (H x W x D)	160 x 85 x 45 mm (H x W x D)
Weight	Approx. 550 g	Approx. 300 g

Process calibrators // for thermocouples

Order code		
Type	Version	Order number
EC TC.2	Accuracy ± 0.05 % of reading + const.	EME8VCEC0TC020
UC TC.2	Accuracy ± 0.02 % of reading + const.	EME8A0UC0TC020

Order code	
Accessories	Order number
DAkkS certificate	EKSIMMON00000D
SIKA works calibration certificate	EKSIMMON00000W
Transport case	EME8GKK3100000
Plug connector 4 mm, red	EME8A0SKLS40RT
Plug connector 4 mm, black	EME8A0SKLS40SW
Software Datacal for UC TC.2	EME8A0MCSWDCKA
Battery and charger for UC series	EME8A0AN601100

Process calibrators // for resistance thermometers



EC RTD.2



UC RTD.2

Your advantages

Type

EC RTD.2 / UC RTD.2

- Precise simulation and measurement of RTD signals
- Simple to use and robust housing
- For mobile on-site calibration

Technical data

Type	EC RTD.2	UC RTD.2
Resistance thermometers (RTD)		
Generation and measurement of RTD signals	Pt100, Cu50	Pt50, Pt100, Pt200, Pt500, Pt1000, Cu10, Cu50, Ni100, Ni120, Ni1000
Ω-generator function	0...400 Ω	0...3500 Ω
Ω-measurement function	0...450 Ω	0...3600 Ω
Accuracy (of reading + const.)	±0.05 %	±0.012 %
Selectable temperature unit	°C / °F	°C / °F
Measurement of multi-wire connections	2	2 / 3 / 4

Functions		
Type	EC RTD.2	UC RTD.2
Generation		
High-speed call values		10 points (flexible)
Linear steps and ramps		✓
User-defined synthesiser values		10
User-defined signal output characteristic		10 points
Editable units		✓
Output zero	✓	
Measurement		
Data memory		10 000 values
Value tables and graphics function		✓
Offset programming for sensor characteristic		✓
Calibration data files and linearisation points		5 x 4 values
User-defined measuring input characteristic		10 points
Editable units		✓
Measured value min. / max.		✓
Measured value hold function		✓
Averaging function		✓

General data		
Type	EC RTD.2	UC RTD.2
Features		
Sensor connection	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips (optional)
Power supply	1 x 9 V monobloc battery Operating time approx. 25 h with auto-power-off	4 x 1.5 V AA-battery Operating time approx. 40 h or rechargeable battery including power adapter 230 VAC / 12 VDC (optional)
PC Interface		mini-USB Type B
Operator guidance	Keypad	Menu with pull-down windows, programming and control via PC
Display	Multifunction display LCD, 5½ digit	Multifunction display LCD, 6 digit
Housing		
Version	ABS plastic with protective cover	
Dimensions	200 x 100 x 40 mm (H x W x D)	160 x 85 x 45 mm (H x W x D)
Weight	Approx. 550 g	Approx. 300 g

Process calibrators // for resistance thermometers

Order code		
Type	Version	Order number
EC RTD.2	Accuracy ± 0.05 % of reading + const.	EME8VCECDRTD020
UC RTD.2	Accuracy ± 0.012 % of reading + const.	EME8A0UCRTD020

Order code	
Accessories	Order number
DAkkS certificate	EKSIMMON00000D
SIKA works calibration certificate	EKSIMMON00000W
Transport case	EME8GKK3100000
Plug connector 4 mm, red	EME8A0SKLS40RT
Plug connector 4 mm, black	EME8A0SKLS40SW
Software Datacal for UC RTD.2	EME8A0MCSWDCKA
Battery and charger for UC series	EME8A0AN601100

Process calibrators // for current and voltage signals



EC mAV.2



UC mAV.2

Your advantages

Type

EC mAV.2 / UC mAV.2

- Precise simulation and measurement of current and voltage signals
- Simple to use and robust housing
- For mobile on-site calibration

Technical data

Type	EC mAV.2	UC mAV.2
Current (mA)		
Loop current signal generation	0...22 mA	0(4)...25 mA
Loop current signal measurement	-1...22 mA	-6...25 mA
Accuracy (of reading + const.)	±0.05 %	±0.015 %
Current loop supply	24 V ±10 %, 22 mA	24 V ±10 %, 25 mA
HART Communication protective resistor		250 Ω
Voltage (V)		
Voltage signal generation		0...10(15) V
Voltage signal measurement	-0,2...28 V	-5...50 V
Accuracy (of reading + const.)	±0.02 %	±0.015 %
Continuity (0/C)		
Continuity measurement		0 / C
Switching threshold „open“		1 kΩ

Functions		
Type	EC mAV.2	UC mAV.2
Generation		
High-speed call values	7 points (fix) in 25 % steps	10 points (flexible)
Linear steps and ramps	✓	✓
User-defined signal output characteristic		10 points
Editable units		✓
Measurement		
User-defined measuring input characteristic		10 points
Editable units		✓
Measured value min. / max.		✓
Measured value hold function		✓
Averaging function		✓

General data		
Type	EC mAV.2	UC mAV.2
Features		
Sensor connection	4 safety sockets (1 channel) incl. 2 sets with safety instrument leads (4 mm) and alligator clips	
Power supply	1 x 9 V monobloc battery Operating time approx. 20 h	4 x 1.5 V AA-battery Operating time approx. 25 h or rechargeable battery including power adapter 230 VAC / 12 VDC (optional)
PC Interface		mini-USB Type B
Operator guidance	Keypad	Menu with pull-down windows
Display	Multifunction display LCD, 5½ digit	Multifunction display LCD, 6 digit
Housing		
Version	ABS plastic with protective cover	
Dimensions	200 x 100 x 40 mm (H x W x D)	160 x 85 x 45 mm (H x W x D)
Weight	Approx. 550 g	Approx. 300 g

Order code		
Type	Version	Order number
EC mAV.2	Accuracy ± 0.05 % of reading + const.	EME8VCECMAV020
UC mAV.2	Accuracy ± 0.015 % of reading + const.	EME8AOUCCMAV020

Order code		Order number
Accessories		Order number
DAkkS certificate		EKSIMMON00000D
SIKA works calibration certificate		EKSIMMON00000W
Transport case		EME8GKK3100000
Plug connector 4 mm, red		EME8AOSKLS40RT
Plug connector 4 mm, black		EME8AOSKLS40SW
Battery and charger for UC series		EME8AOAN601100