Digital Panel Meters
Modular Indicator and Controller
Type UDM40



- **The alarm status can be coupled to the different colour of the display**
- **Linearization of V and A inputs up to 16 points**

- **Multi-input modular instrument 4 dgt LED**
- **0.1% RDG basic accuracy**
- **TRMS AC current and voltage measurements**
- **AC/DC current measurements; selectable full scales (200µA to 5A)**
- **AC/DC voltage measurements; selectable full scales (200mV to 500V)**
- **°C or °F temperature measurements (Pt100-250-500-1000, Ni100, TC J-K-S-T-E)**
- **Resistance measurements; selectable full scales (20Ω to 20kΩ)**
- **Up to 4 independent alarm set-points (optional)**
- **20mA/10VDC analog output (optional)**
- **Serial port RS485 or RS232 (optional)**
- **MODBUS, JBUS communication protocol**
- **Front protection degree: IP67, NEMA4x**
- **LED display, selectable colour (red, amber, green)**

Product Description

µp-based digital panel meter, 4-dgt LED indicator, for current, voltage, temperature and resistance measurements. Measuring ranges and functions easily programmable from the key-pad or from the PC by means of optional UdmSoft software. UDM40 includes storage min-max functions and double level protection password. Housing for panel mounting with front protection degree: IP67, NEMA4x.

How to order

UDM40 XXX XX XX X XX

Model
Slot A
Slot B
Slot C
Slot D
Options

How to order

UdmSoft-kit

UdmSoft-kit: software plus "UCOM1" communication cable for programming UDM40 by means of PC .

Type Selection

Slot A (measuring inputs)

LSX: signal inputs: 0.2-2-20mA DC/AC; 0.2-2-20V DC/AC
LSE/ LSF: signal inputs: + AUX: 0.2-2-20mA DC/AC; 0.2-2-20V DC/AC
HSX: signal inputs: 0.2-2-5A DC/AC; 20-200-500V DC/AC
TRX: signal inputs: TC temperature probes (J-K-S-T-E, Pt100-250-500-1000) and resistance (0.02-0.2-2-20kΩ)

Slot B (communication)

XX: None
SX: Serial port RS485
SY: Serial port RS232
AV(*): Single analogue output, 0 to 20mA DC and 0 to 10V DC

(*): The two analogue outputs cannot be used at the same time. It is possible to plug in only one module by instrument.

Slot C (communication and alarm)

XX: None
R1: Single relay output, (AC1-8AAC, 250VAC)
R2: Dual relay output, (AC1-8AAC, 250VAC)
R4: Dual relay output, (AC1-8AAC, 250VAC) + dual open collector output (NPN, 100mA)
R5: 4 relay outputs (AC1-5AAC, 250VAC)
AV(*): Single analogue output, 0 to 20mA DC and 0 to 10V DC

Slot D (power supply)

H: 90 to 260V AC/DC
L: 18 to 60V AC/DC

Options

XX: None
TX: Tropicalization

Input Specifications

Analogue inputs	Channels and variable
BQ LSX module	1, mA and V DC/AC
BQ LSE/LSF module	1, mA and V DC/AC + AUX
BQ HSX module	1, A and V DC/AC
BQ TRX module	1, temperature
BQ TRX module	1, resistance
Digital inputs	Incl. in the measuring module
Number of inputs	1 (voltage-free)
Use	key-pad lock Display hold Reset of latch alarms
Contact reading signal	BQ xxx: <0.1mA, <3,5V DC BQ LSE/BQ LSF: <2.5mA, <14V DC
Close contact resistance	Max 1kΩ
Open contact resistance	Min 500kΩ
Insulation	Non-insulated
Accuracy (display, RS485)	See table "Measuring accuracy", temperature drifts and minimum-maximum indications"

Input specifications (cont.)

Additional errors	
Humidity	0.3% RDG, 60% to 90% R.H.
Input frequency	0.4% RDG, 62 to 440 Hz
Magnetic field	0.5% RDG @ 400 A/m
Temperature drift	See table "Measurement accuracy, temperature drifts, and max/min indications"
Sampling rate	500 samples/s @ 50 Hz
Display refresh time	200 msec @ 50Hz
Display	4 DGT, 7 segments height 14.2 mm
Colour	Selectable (red, amber, green)
Max and min indication	See table "Measurement accuracy, temperature drifts and max min indications"
Measurements	Current, voltage, temperature and resistance. For the current and voltage measurements: TRMS measurement of distorted sine waves.
Coupling type	Direct
Crest factor	≤3; A_{Pmax}=1.7In; V_{Pmax}=1.7Un
Input impedance	See table "input impedances and overloads"
Frequency	40 to 440 Hz
Overload	See table "input impedances and overloads"
Compensation	Only temperature measurement module.
RTD	- For Pt 100-250-500-1000, 3-wire connection: up to 10Ω - For resistance measur. with 20Ω range: up to max 0.1Ω - For resistance measurements with ≥200Ω range: up to max 10Ω
TC	Internal cold junction, within temperature range from 0 to +50°C. Automatic or manual com-

Measurement accuracy, temp. drifts, max and min indications

All accuracies and min/max indications are referred to an ambient temp. range of 25°C ±5°C, rel. humidity ≤60% and scale ratio (electrical/displayed scale) equal to 1. The conversion into °F is obtained acting on the electrical/displayed scale ratio.

Module	Inputs	Type	Accuracy	Temp. drift	Min. indication (▪)	Max. indicat. (▪)
BQ LSX/ BQ LSE/ BQ LSF	-200µA to +200µA -2mA to +2mA -20mA to +20mA -200mV to +200mV -2V to +2V -20V to +20V	DC/AC	DC: ±(0.1%RDG+3DGT) 0% to 25% FS; ±(0.1%RDG+2DGT) 25% to 110% FS. TRMS (da 45 a 65Hz)*: ±(0.3%RDG+3DGT) 0% to 25% FS; ±(0.3%RDG+2DGT) 25% to 110% FS.	±150 ppm/°C	- 200.0 - 2.000 - 20.00 - 200.0 - 2.000 - 20.00	+ 200.0 + 2.000 + 20.00 + 200.0 + 2.000 + 20.00
BQ HSX	-200mA to +200mA -2A to +2A -5A to +5A -20V to +20V -200V to +200V -500V to +500V	DC/AC	DC: ±(0.1%RDG+3DGT) 0% to 25% FS; ±(0.1%RDG+2DGT) 25% to 110% FS. TRMS (45 to 65Hz)*: ±(0.3%RDG+3DGT) 0% to 25% FS; ±(0.3%RDG+2DGT) 25% to 110% FS.	±150 ppm/°C	- 200.0 - 2.000 - 5.000 - 20.00 - 200.0 - 500.0	+ 200.0 + 2.000 + 5.000 + 20.00 + 200.0 + 500.0
BQ TRX Thermo-couple	-50°C to +760°C -58 °F to +1400 °F -200°C to +1260°C -328 °F to +2300°F -200°C to +1000°C -328°F to +1832°F -50°C to +1750°C -58°F to +3182°F -200°C to +400°C -328°F to +752°F	J J K K E E S S T T	±(0.2%RDG+1DGT) ±(0.2%RDG+2DGT) ±(0.2%RDG+2DGT) ±(0.2%RDG+4DGT) ±(0.2%RDG+2DGT) ±(0.2%RDG+4DGT) ±(0.2%RDG+2DGT) ±(0.2%RDG+4DGT) ±(0.2%RDG+2DGT) ±(0.2%RDG+4DGT)	±150 ppm/°C	- 50°C - 58°F - 200°C - 328°F - 200°C - 328°F - 50°C - 58°F - 200°C - 328°F	+ 760°C + 1400°F + 1260°C + 2300°F + 1000°C + 1832°F + 1750°C + 3182°F + 400°C + 752°F

* <45Hz >65Hz= ±(0.5%RDG+3DGT) 0% to 25% FS; ±(0.5%RDG+2DGT) 25% to 110% FS.

(▪) The min. indication for TRMS measurement (AC or DC) is 0; it is possible to modify the decimal point position.

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Measurement accuracy, temp. drifts, min max indications (cont.)

All accuracies and min/max indications refer to an ambient temperature range of 25°C ±5°C, relevant humidity ≤60% and scale ratio (electrical scale / displayed scale) equal to 1. The conversion into °F is obtained acting on the electrical/displayed scale ratio.

Module	Inputs	Type	Accuracy	Temp. Drift	Min. Indication	Max. Indication
BQ TRX Thermoresistance	-200°C to +850°C	Pt100	±(0.2%RDG +2DGT)	±150 ppm/°C	- 200	+ 850
	-328°F to +1562°F	Pt100	±(0.2%RDG +4DGT)		- 328	+ 1562
	-200.0°C to +200.0°C	Pt100	±(0.5%RDG +5DGT)		- 200.0	+ 200.0
	-328°F to+392°F	Pt100	±(0.5%RDG +5DGT)		- 328.0	+ 392.0
	-200.0°C to +200.0°C	Pt250	±(0.5%RDG +5DGT)		- 200.0	+ 200.0
	-328°F to +392°F	Pt250	±(0.5%RDG +5DGT)		- 328.0	+ 392.0
	-200.0°C to +200.0°C	Pt500	±(0.5%RDG +5DGT)		- 200.0	+ 200.0
	-328°F to +392°F	Pt500	±(0.5%RDG +5DGT)		- 328.0	+ 392.0
	-200.0°C to +200.0°C	Pt1000	±(0.5%RDG +5DGT)		- 200.0	+ 200.0
	-328°F to +392°F	Pt1000	±(0.5%RDG +5DGT)		- 328.0	+ 392.0
	-60°C to +180°C	Ni100	±(0.5%RDG +1DGT)		- 60	+ 180
	-76°F to +356°F	Ni100	±(0.5%RDG +2DGT)		- 76	+ 356
BQ TRX Resistance	0 to 20Ω	Ω	±(0.2%RDG+2DGT)	±150 ppm/°C	0	20.00 **(▪)**
	0 to 200Ω		25% to 110% FS		0	200.0 **(▪)**
	0 to 2000Ω		±(0.2%RDG+3DGT)		0	2000 **(▪)**
	0 to 20.00kΩ		0% to 25% FS		0	20.00 **(▪)**

(▪) It is possible to modify the decimal point position.

Input impedances and overloads

Module	Inputs	Type	Impedance	Overload (continuous)	Overloads (1s)
BQ LSX/ BQ LSE/ BQ LSF	-200µA to +200µA	DC/AC	≤2,2kΩ	5mA	10mA
	-2mA to +2mA	DC/AC	≤22Ω	50mA	150mA
	-20mA to +20mA	DC/AC	≤22Ω	50mA	150mA
	-200mV to +200mV	DC/AC	≥2,2kΩ	10V	20V
	-2V to +2V	DC/AC	≥200kΩ	50V	100V
	-20V to +20V	DC/AC	≥200kΩ	50V	100V
BQ HSX	-200mA to +200mA	DC/AC	≤1Ω	0.8A	1A
	-2A to +2A	DC/AC	≤0.012Ω	7.5A	100A
	-5A to +5A	DC/AC	≤0.012Ω	7.5A	100A
	-20V to +20V	DC/AC	≥2MΩ	750V	1000V
	-200V to +200V	DC/AC	≥2MΩ	750V	1000V
	-500V to +500V	DC/AC	≥2MΩ	750V	1000V
BQ TRX Thermocouple	-50°C to +760°C	J	I_{LK} <0.5µA	Max 5V	Max 10V
	-58 °F to +1400 °F	J			
	-200°C to +1260°C	K			
	-328 °F to +2300°F	K			
	-200°C to +1000°C	E			
	-328°F to +1832°F	E			
	-50°C to +1750°C	S			
	-58°F to +3182°F	S			
	-200°C to +400°C	T			
	-328°F to +752°F	T			
BQ TRX Thermoresistance	-200°C to +850°C	Pt100	800µA (*)	Max 5V	Max 10V
	-328°F to +1562°F	Pt100	800µA (*)		
	-200.0°C to +200,0°C	Pt250/Pt100	90µA (*)		
	-328°F to +392°F	Pt250/Pt100	90µA (*)		
	-200.0°C to +200,0°C	Pt1000/Pt500	800µA (*)		
	-328°F to +392°F	Pt1000/Pt500	800µA (*)		
	-60°C to +180°C	Ni100	800µA (*)		
	-76°F to +356°F	Ni100	800µA (*)		
BQ TRX Resistance	0 to 20Ω	Ω	800µA (*)	Max 5V	Max 10V
	0 to 200Ω		90µA (*)		
	0 to 2000Ω		800µA (*)		
	0 to 20.00kΩ		90µA (*)		

(*) Maximum measuring current generated for resistance equal to 0

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Output specifications

RS422/RS485	**(on request)**
	Module: BR SX
Serial output	Bidirectional (static and dynamic variables).
LED	Display of data reception/transmission
Connections	Multidrop, 2 or 4 wires,
Distance	1000 m
Terminalization	Directly on the module by means of jumper
Addresses	1 to 255, selectable by means of key-pad
Protocol	MODBUS RTU/JBUS
Data (bidirectional)	
Dynamic (reading only)	Measurement, min value max value alarm status
Static (reading/writing)	All programming parameters, min max reset reset of latch alarm
Data format	8 data bit, no parity, 1 stop bit
Baud rate	selectable 4800, 9600,19200 and 38400 bit/s
Insulation	By means of opto-couplers 4000 V_{rms} output to measuring inputs 4000 V_{rms} output to power supply input
RS232	**(on request)**
	Module: BR SY
Serial output	Bidirectional (static and dynamic variables)
Connections	3 wires,
Distance	max. 15m
Data format	1 start bit, 8 data bit, no parity, 1 stop bit
Baud rate	Selectable 4800, 9600, 19200 and 38400 bit/s
Other features	Same as RS422/485
Alarm outputs	**(on request)**
Alarm type	Over-range alarm, up alarm, down alarm, down alarm with start-up deactivation up alarm with latch, down alarm with latch
Alarm set-point	Adjustable from 0 to 100% of displayed electric range
Hysteresis	0 to 100% of displayed range
On-time delay	0 to 255 s
Off-time delay	0 to 255 s
Output status	Selectable: normally energized /de-energized
Display colour for alarms	Three available coloures (green, amber, red) can be coupled to the alarm status (traffic-light function).
Min response time	500 ms, with filter excluded, without alarm activation delay
Output channels	1 with module BO R1 (relay output). 2, independent with module BO R2 (2 relay outputs). 4, independent with module BO R4 (2 relay outputs + 2 open collector outputs). BO R5 (4 relay outputs)
Relay output BO R1, R2, R4	Type SPDT AC 1: 8A, 250VAC DC 12: 5A, 24VDC AC 15: 2.5A, 250VAC DC 13: 2.5A, 24VDC
Relay output BO R5	Type SPST (NO) AC 1: 5A, 250VAC DC 12: 3A, 24VDC AC 15: 1,5A, 250VAC DC 13: 1,5A, 24VDC
Insulation	4000 V_{RMS} output to measuring input, 4000 V_{RMS} output to power supply input.
Open collector output	NPN transistor type V_{ON} 1.2 VDC/ max. 100 mA V_{OFF} 30 VDC max.
Insulation	By means of opto-couplers 4000 V_{RMS} output to measuring input 4000 V_{RMS} output to power supply input
Analogue output	**(on request)**
	Module: BO AV
Range	0 to 20 mADC, 0 to 10 VDC
Scaling factor	Programmable within the entire retransmission range; allows to manage the retransmission of all the values from 0 to 20 mA / 0 to 10V
Accuracy	± 0.2% FS (@ 25°C ± 5°C)
Response time	≤ 10 ms
Termperature drift	± 200 ppm/°C
Load: 20 mA output	≤ 700 Ω
10 V output	≥ 10 kΩ
Insulation	By means of opto-couplers 4000V_{rms} output to measuring input 4000V_{rms} output to power supply input
Notes:	The two outputs cannot be used at the same time.
Excitation output	**(on request)**
BQ LSE Module	
Voltage	13 VDC ±10% max. 50 mA
BQ LSF Module	
Voltage	25 VDC ±10% max. 25 mA
Insulation	25V_{rms} output to measuring input 4000 V_{rms} output to power supply input

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Software functions

Min / Max storage	Automatic storage (in the EEPROM) of the minimum and maximum measured value from the previous memory reset
Password 1st level 2nd level	Numeric code max 4 dgt 2 levels of data protection. 0 to 4999 completly protected. 5000 to 9999 access to programming is protected . Alarm set-points are directly programmable from the measuring mode.
Measurement selection	Depending on the module: measuring range and type of probe (resistance, RTD thermoresistance, TC thermocouple) or measuring type (TRMS or DC).
Integration time selection	Automatic or from 100.0 to 999.9 ms only in the current and voltage measurement.
Scaling factors Operating mode Electrical range Decimal point position Displayed range of the variable	 Electrical scale compression, displayed scale compression/expansion (max. 2 without filter, up to 10 with filter) Programmable within the whole measuring range Programmable within the display range Programmable within the display range
Diagnostics Burn-out: TC RTD	The display flashes when the limits of the display range are exceeded and the data are updated up to 20% of the rated display range. Only temperature inputs Opening of probe's connection: EEE indication Opening of probe's connection: EEE indication probe's short circuit: -EEE indication.
Digital filter Filter operating range Filtering coefficient	 0 to 9999 1 to 32
Scaling	Selection of min value of the input range. Selection of max value of the input range. Selection of decimal point position. Selection of min display value. Selection of max display value.
Linearization Points Input range Output range	 Up to 16 Selectable by every single point Selectable by every single point
UdmSoft	Software for programming UDM40 by means of PC (Windows 95, 98se, ME, XP) by means of serial port RS485 and relevant connection cable. The software is available in English, Spanish, Italian, German, French. See also "Programming of UDM40 by means of PC" .

General Specifications

Operating temperature	0° to 50°C (32° to 122°F) (H.R. < 90% non-condensing)
Storage temperature	-10° to 60°C (14° to 140°F) (H.R. < 90% non-condensing)
Insulation reference voltage	300 V_{RMS} to ground (500V input)
Insulation	See table "Insulation between inputs and outputs"
Dielectric strength	4000 V_{RMS} for 1 minute
Rejection NMRR CMRR	 40 dB, 40 to 60 Hz 100 dB, 40 to 60 Hz
EMC	EN61000-6-2, IEC61000-6-2 EN61000-6-3, IEC61000-6-3
Safety Standards Safety	 EN 61010-1, IEC 61010-1
Connections Wire section	 Screw type Max 2.5mm^2
Housing Dimensions Material	 1/8 DIN, 48 x 96 x 105 mm PC-ABS, self-extinguishing: UL 94 V-0
Protection degree	Front: IP67, NEMA4x Connections: IP20
Weight	520 g approx (included all modules and packing)
Approvals	CE, UR, CSA

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Supply Specifications

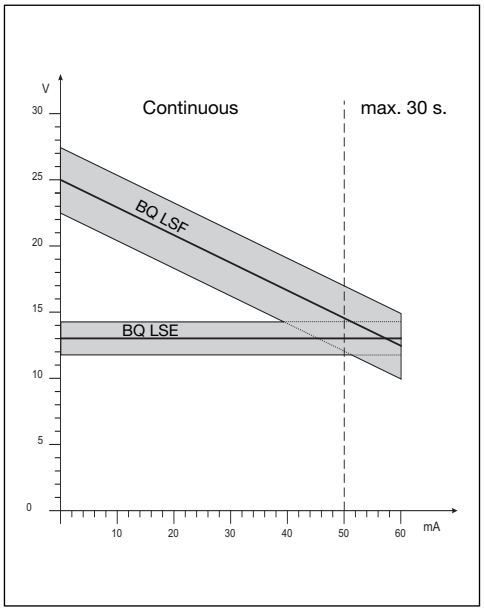
AC/DC voltage

90 to 260V (standard)
18 to 60V (on request)

Energy consumption

≤ 30VA/12W (90 to 260V)
≤ 20VA/12W (18 to 60V)

Excitation output



Insulation between inputs and outputs

	Meas. inputs	Relay output	Static output	Analogue output	Serial Port	AUX p.supply	90-260VAC/ DC p.supply	18-60VAC/ DC p.supply
Meas. inputs	-	4kV	4kV	4kV	4kV	25V	4kV	4kV
Relay Output	4kV	-	2kV	4kV	4kV	4kV	4kV	4kV
Static Output	4kV	2kV	-	4kV	4kV	4kV	4kV	4kV
Analogue Output	4kV	4kV	4kV	-	4kV	4kV	4kV	4kV
Serial Port	4kV	4kV	4kV	4kV	-	4kV	4kV	4kV
AUX p.supply	25V	4kV	4kV	4kV	4kV	-	4kV	4kV
90-260VAC/ DC p.supply	4kV	4kV	4kV	4kV	4kV	4kV	-	-
18-60VAC/ DC p.supply	4kV	4kV	4kV	4kV	4kV	4kV	-	-

Available modules

Type	N. of channels	Ordering code
UDM40 main unit		BD 40
DC/AC input: 200μA , 2mA, 20mA, 200mA, 2V, 20V	1	BQ LSX
DC/AC input: 200μA , 2mA, 20mA, 200mA, 2V, 20V + excitation output	1	BQ LSE/ BQ LSF
DC/AC input: 200mA, 2A, 5A, 20V, 200V, 500V	1	BQ HSX
Input: 20Ω, 200Ω, 2kΩ, 20kΩ	1	BQ TRX
TC: J-K-S-T-E, Pt100-250-500-1000	1	BQ TRX
Analogue output 0 to 20mA, 0 to 10VDC	1	BO AV
Relay output	1	BO R1
Relay output	2	BO R2
Outputs: 2 relays + 2 open collectors	4	BO R4
Relay output	4	BO R5
RS485 Serial Port	1	BR SX
RS232 Serial Port	1	BR SY
Power supply 18 to 60V AC/DC		BP L
Power supply 90 to 260V AC/DC		BP H

Possible module combinations

Basic Unit	Slot A	Slot B	Slot C	Slot D
Measuring inputs: LSX, LSE, LSF, HSX, TRX	●			
RS485 Serial port: SX		●		
RS232 Serial port: SY		●		
Analogue output: AV (*)		●	●	
Relay outputs and/or open collector: R1, R2, R4, R5			●	
Power supply: H, L				●

(*) Up to 1 module max.

Used calculation formulas

Only for TRMS Measurements

Instantaneous effective voltage (TRMS)

$$V_1 = \sqrt{\frac{1}{n} \cdot \sum_1^n (V_1)_i^2}$$

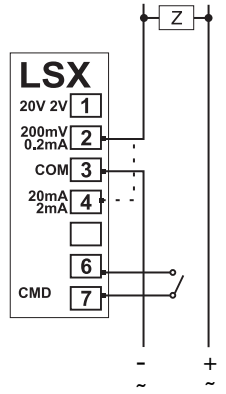
Instantaneous effective current (TRMS)

$$A_1 = \sqrt{\frac{1}{n} \cdot \sum_1^n (A_1)_i^2}$$

Wiring diagrams

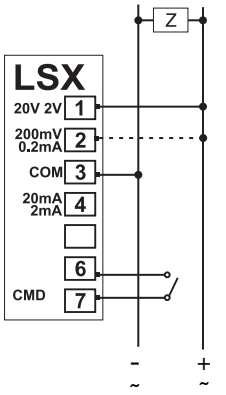
Process signal wiring diagrams

BQ LSX/LSE/LSF Fig. 1



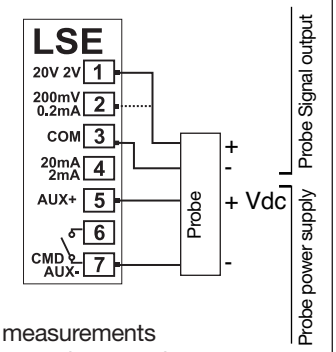
Current measurements

BQ LSX/LSE/LSF Fig. 2



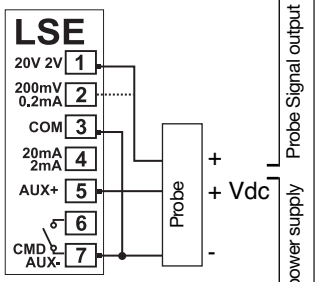
Voltage measurements

BQ LSE/LSF Fig. 3



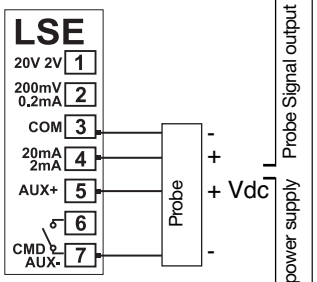
Voltage measurements
4-wire connection to probe

BQ LSE/LSF Fig. 4



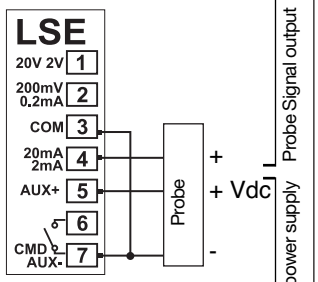
Voltage measurements
3-wire connection to probe

BQ LSE/LSF Fig. 5



Current measurements
4-wire connection to probe

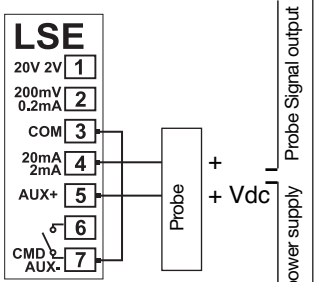
BQ LSE/LSF Fig. 6



Current measurements
3-wire connection to probe

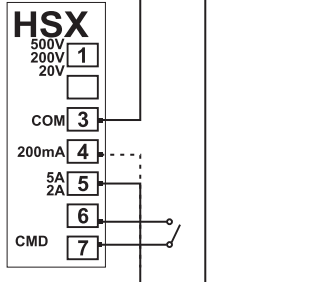
Wirings for high-level signals

BQ LSE/LSF Fig. 7



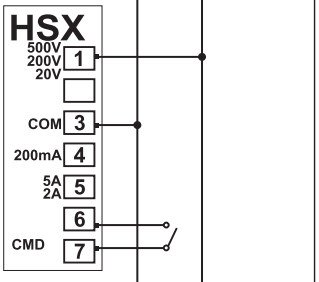
Current measurements
2-wire connection to probe

BQ HSX Fig. 8



Current measurements~

BQ HSX Fig. 9

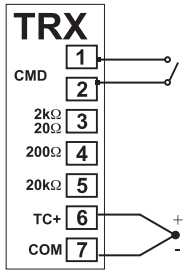


Voltage measurements~

Wiring diagrams (cont.)

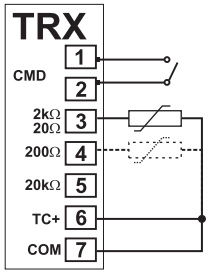
Wiring diagrams for temperature measurements

BQ TRX Fig. 10



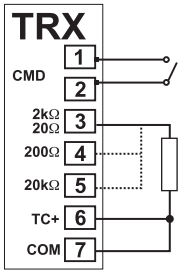
Temp. measur. from thermocouple

BQ TRX Fig. 11



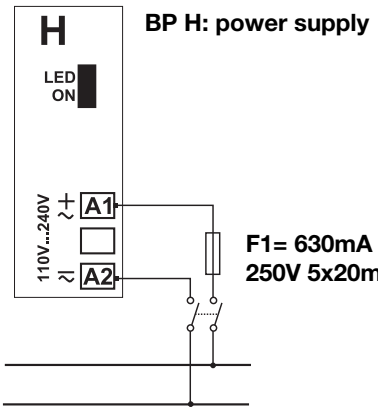
Temp. measur. from thermoresistance

BQ TRX Fig. 12



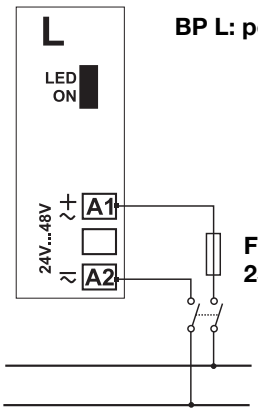
Resistance measurements

Wiring diagrams for power supply



BP H: power supply

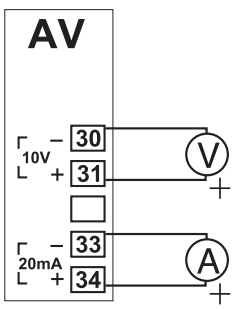
F1= 630mA T 250V 5x20mm



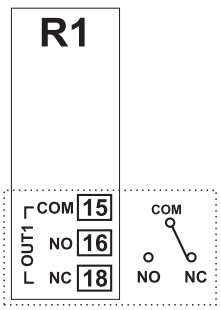
BP L: power supply

F1= 3.15A T 250V 5x20mm

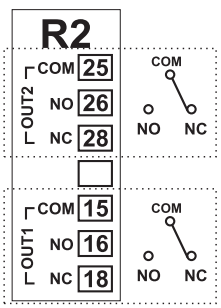
Wiring diagrams of optional modules



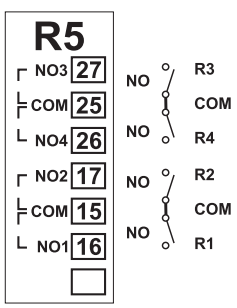
BO AV: analogue output (10V, 20mA DC)



BO R1: 1 relay output

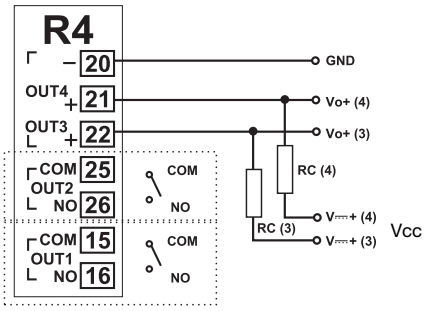


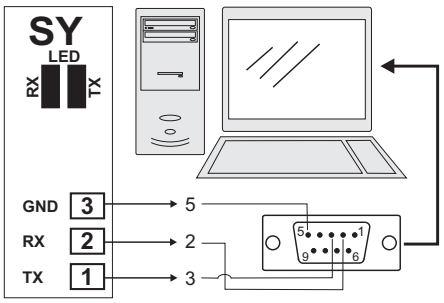
BO R2: 2 relay outputs



BO R5: 4 relay outputs

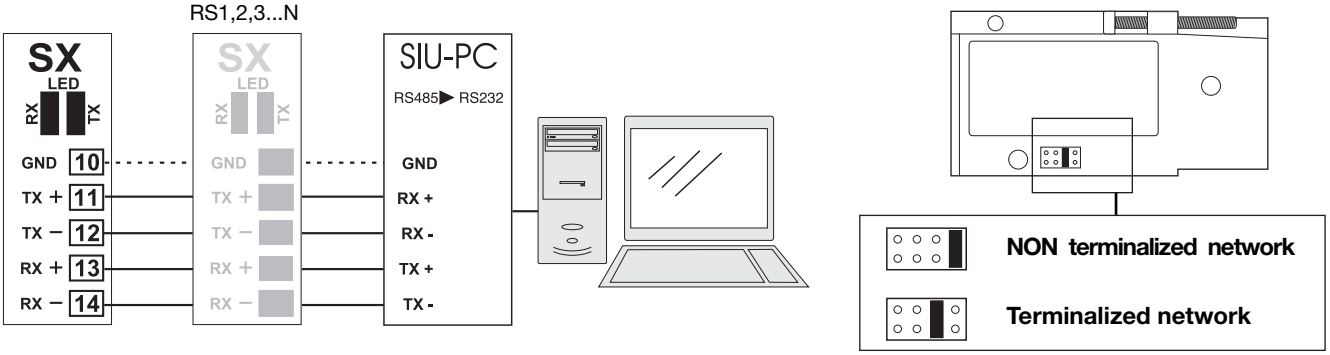
Wiring diagrams of optional modules (cont.)





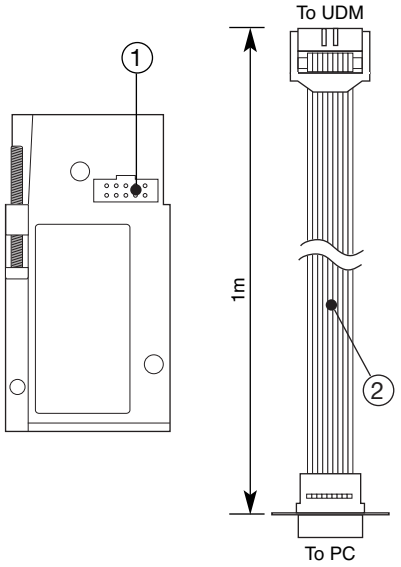
BO SY: RS232 direct connection to PC by means of COM port. RS232 has no terminalization.

BO R4: dual relay output + dual open collector output: the load resistances (Rc) must be designed so that the close contact current is lower than 100mA; the VDC voltage must be lower than or equal to 30VDC.
VDC: power supply output
Vo+: positive output (open collector transistor).
GND: ground collector (open collector transistor).



BR SX: RS485 4-wire connection: additional devices provided with RS485 port (indicated as RS1,2,3...N) are connected in parallel. The termination of the serial port is carried out only on the last instrument of the network. The serial module is provided with a jumper for the termination of the RS485 network as shown in the figure above.
Note: particular types of cables or plants may require an external termination. For the network connections use twisted cable type AWG26.

Programming UDM40 by means of PC

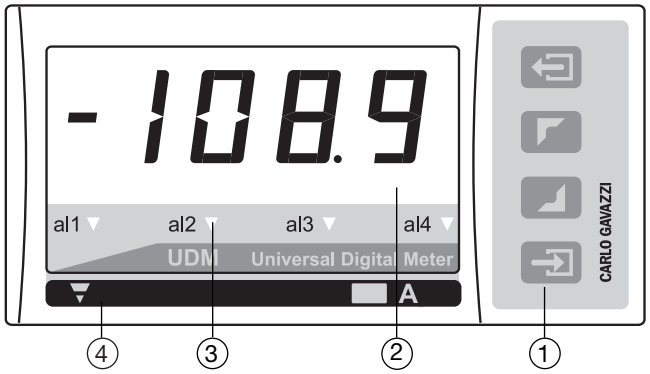


UDM40 is programmable by PC by means of the UdmSoft software (available on request). The user can program all parameters of UDM40 that will be subsequently uploaded and set in the instrument by the RS485 network (BR SX).
Should UDM40 be without the RS485 serial module, all programming parameters will be uploaded and set in the instrument by the RS232 auxiliary serial connection (1) located on the side of the measuring input module using the special connection cable (2) available on request, as shown in the figures on the left. It is also possible to program the instrument using the dot connector (1) by means of the HyperTerminal Windows functions of a PC.

Note: the RS232 auxiliary port IS NOT insulated from the measuring inputs.

Ordering code of the cable (2): UCOM1

Front panel description



1. **Key-pad**
   The programming of the configuration parameters and the display may be easily controlled by means of the 4 function keys.
   : to enter the programming phase and to confirm the password.
   :
   - to program values;
   - to select functions;
   - to scroll display pages.

   : for special functions.

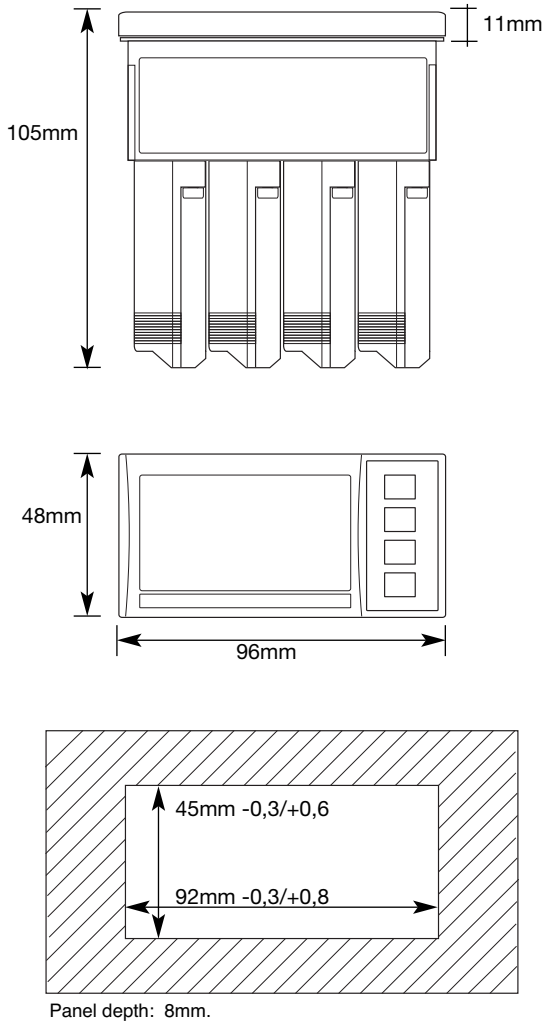
2. **Display**
   Instantaneous measurements:
   - 4 digit (max display 9999).

   Alphanumeric indications by means of LED display for:
   - Display of configuration parameters;
   - The measured variable.

3. **Alarm status LED**
   Display any alarm condition

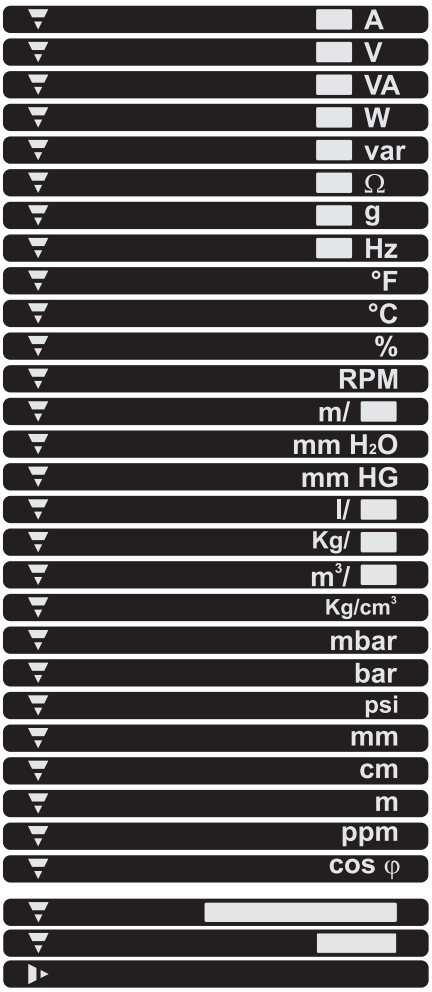
4. **Engineering unit**
   The instrument is supplied with a complete set of self-sticking labels with the main engineering units.

Dimensions



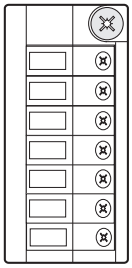
Panel depth: 8mm.

Engineering Units



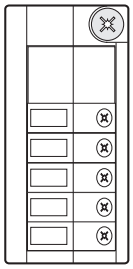
Modules

Input modules

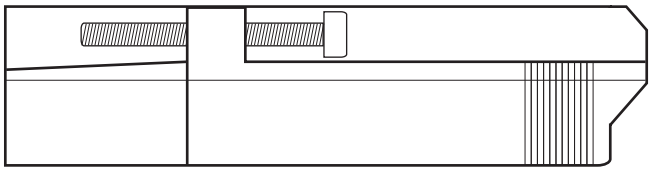


BQ LSX, BQ LSE, BQ LSF, BQ HSX, BQ TRX
Measuring inputs

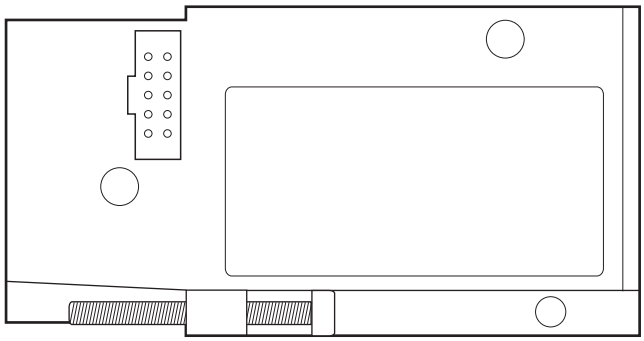
Output modules



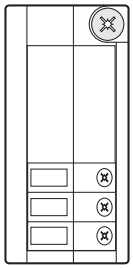
BO AV
Single analogue output 10V, 20mA DC



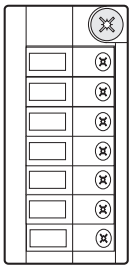
Scale 1:1



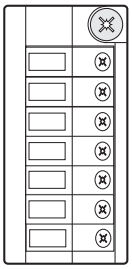
Output modules



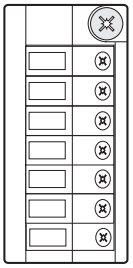
BO R1
Single relay output



BO R2
Dual relay output

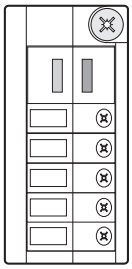


BO R4
Dual relay output +
Dual open collector

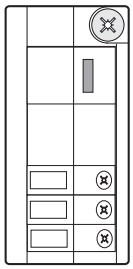


BO R5
4 relay outputs

Serial port modules

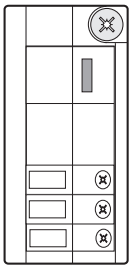


BR SX
RS485 Serial port

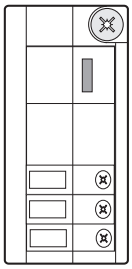


BR SY
RS232 Serial port

Power supply modules



BP H
Power supply:
60 to 260V AC/DC



BP L
Power supply:
18 to 60V AC/DC