

Digital Panel Meters Modular Indicator and Controller Type UDM35

CARLO GAVAZZI



- Front protection degree: IP67, NEMA4x

- Multi-input modular instrument 3 1/2 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

Product Description

μp-based digital panel meter, 3 1/2 dgt LED indicator, for current, voltage, temperature and resistance measurements. Measuring ranges and functions easily programmable from the keypad or from the PC by

means of optional UdmSoft software. UDM35 includes storage min-max functions and double level protection password. Housing for panel mounting with front protection degree: IP67, NEMA4x.

How to order

UDM35 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 UDM35 by means of PC.

Type Selection

Slot A (measuring inputs)	Slot B (communication)	Slot C (communication and alarm)	Slot D (power supply)
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)	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.	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	H: 90 to 260V AC/DC L: 18 to 60V AC/DC Options XX: None TX: Tropicalization

Input Specifications

Analogue inputs BQ LSX module BQ LSE/BQ LSF module BQ HSX module BQ TRX module BQ TRX module	Channels and variable 1, mA and V DC/AC 1, mA and V DC/AC + AUX 1, A and V DC/AC 1, temperature 1, resistance	Contact reading signal Close contact resistance Open contact resistance Insulation	BQ xxx: <0.1mA, <3.5V DC BQ LSE/BQ LSF: <2.5mA, <14V DC Max 1kΩ Min 500kΩ Non-insulated
Digital inputs Number of inputs Use	Incl. in the measuring module 1 (voltage-free) key-pad lock Display hold Reset of latch alarms	Accuracy (display, RS485)	See table "Measuring accuracy", temperature drifts and minimum-maximum indications"



Input specifications (cont.)

Additional errors	0.3% RDG, 60% to 90% R.H. 0.4% RDG, 62 to 440 Hz 0.5% RDG @ 400 A/m	Coupling type Crest factor	waves. Direct ≤ 3 ; $A_{Pmax}=1.7I_n$; $V_{Pmax}=1.7U_n$
Humidity		Input impedance	See table "input impedances and overloads"
Input frequency		Frequency	40 to 440 Hz
Magnetic field		Overload	See table "input impedances and overloads"
Temperature drift	See table "Measurement accuracy, temperature drifts, and max/min indications"	Compensation	Only temperature measurement module.
Sampling rate	500 samples/s @ 50 Hz	RTD	- For Pt 100-250-500-1000, 3-wire connection: up to 10 Ω
Display refresh time	200 msec @ 50Hz		- For resistance measur. with 20 Ω range: up to max 0.1 Ω
Display	3 1/2 DGT, 7 segments height 14.2 mm Colour: red		- For resistance measurements with $\geq 200\Omega$ range: up to max 10 Ω
Max and min indication	See table "Measurement accuracy, temperature drifts and max min indications"	TC	Internal cold junction, within the temperature range from 0 to +50°C. Automatic compensation or manual from 0 to 50°C.
Measurements	Current, voltage, temperature and resistance. For the current and voltage measurements: TRMS measurement of distorted sine		

Measurement accuracy, temperature drifts, max and min indications

All accuracies and min/max indications are referred to an ambient temperature range of 25°C $\pm$ 5°C, relevant humidity $\leq$ 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. indicat. (■)	Max. indicat. (■)
BQ LSX/ BQ LSE/ BQ LSF	-200 μ A to +200 μ A -2mA to +2mA -20mA to +20mA -200mV to +200mV -2V to +2V -20V to +20V	DC/AC	DC: $\pm(0.1\%RDG+3DGT)$ 0% to 25% FS; $\pm(0.1\%RDG+2DGT)$ 25% to 110% FS. TRMS (45 to 65Hz)*: $\pm(0.3\%RDG+3DGT)$ 0% to 25% FS; $\pm(0.3\%RDG+2DGT)$ 25% to 110% FS.	± 150 ppm/°C	- 199.9 - 1.999 - 19.99 - 199.9 - 1.999 - 19.99	+ 199.9 + 1.999 + 19.99 + 199.9 + 1.999 + 19.99
BQ HSX	-200mA to +200mA -2A to +2A -5A to +5A -20V to +20V -200V to +200V -500V to +500V	DC/AC	DC: $\pm(0.1\%RDG+3DGT)$ 0% to 25% FS; $\pm(0.1\%RDG+2DGT)$ 25% to 110% FS. TRMS (45 to 65Hz)*: $\pm(0.3\%RDG+3DGT)$ 0% to 25% FS; $\pm(0.3\%RDG+2DGT)$ 25% to 110% FS.	± 150 ppm/°C	- 199.9 - 1.999 - 5.00 - 19.99 - 199.9 - 500	+ 199.9 + 1.999 + 5.00 + 19.99 + 199.9 + 500
BQ TRX thermo- couple	-50°C to +760°C -58 °F to +1400 °F -200°C to +1260°C -328 °F to +2000°F -200°C to +1000°C -328°F to +1832°F -50°C to +1750°C -58°F to +2000°F -200°C to +400°C -328°F to +752°F	J J K K E E S S T T	$\pm(0.2\%RDG+1DGT)$ $\pm(0.2\%RDG+2DGT)$ $\pm(0.2\%RDG+2DGT)$ $\pm(0.2\%RDG+4DGT)$ $\pm(0.2\%RDG+2DGT)$ $\pm(0.2\%RDG+4DGT)$ $\pm(0.2\%RDG+2DGT)$ $\pm(0.2\%RDG+4DGT)$ $\pm(0.2\%RDG+2DGT)$ $\pm(0.2\%RDG+4DGT)$	± 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 + 1999°F + 1000°C + 1832°F + 1750°C + 1999°F + 400°C + 752°F

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

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

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

All accuracies and min/max indications refer to an ambient temperature range of $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$, relevant humidity $\leq 60\%$ and scale ratio (electrical scale / displayed scale) equal to 1. The conversion into $^{\circ}\text{F}$ is obtained acting on the electrical scale / displayed scale.

Module	Inputs	Type	Accuracy	Temp. Drift	Min. Indication	Max. Indication
BQ TRX Thermoresistance	-200 $^{\circ}\text{C}$ to +850 $^{\circ}\text{C}$	Pt100	$\pm(0.2\%\text{RDG} + 2\text{DGT})$	$\pm 150 \text{ ppm}/^{\circ}\text{C}$	- 200	+ 850
	-328 $^{\circ}\text{F}$ to +1562 $^{\circ}\text{F}$	Pt100	$\pm(0.2\%\text{RDG} + 4\text{DGT})$		- 328	+ 1562
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt100	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt100	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt250	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt250	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt500	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt500	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt1000	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt1000	$\pm(0.5\%\text{RDG} + 5\text{DGT})$		-199.9	+199.9
BQ TRX Resistance	-60 $^{\circ}\text{C}$ to +180 $^{\circ}\text{C}$	Ni100	$\pm(0.5\%\text{RDG} + 1\text{DGT})$	$\pm 150 \text{ ppm}/^{\circ}\text{C}$	- 60	+ 180
	-76 $^{\circ}\text{F}$ to +356 $^{\circ}\text{F}$	Ni100	$\pm(0.5\%\text{RDG} + 2\text{DGT})$		- 76	+ 356
	0 to 20 Ω	Ω	$\pm(0.2\%\text{RDG} + 2\text{DGT})$		0	19.99 (■)
	0 to 200 Ω		25% to 110% FS		0	199.9 (■)
	0 to 2000 Ω		$\pm(0.2\%\text{RDG} + 3\text{DGT})$		0	1999 (■)
	0 to 20.00k Ω		0% to 25% FS		0	19.99 (■)

(■) 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	-200 μA to +200 μA	DC/AC	$\leq 2.2\text{k}\Omega$	5mA	10mA
	-2mA to +2mA	DC/AC	$\leq 22\Omega$	50mA	150mA
	-20mA to +20mA	DC/AC	$\leq 22\Omega$	50mA	150mA
	-200mV to +200mV	DC/AC	$\geq 2.2\text{k}\Omega$	10V	20V
	-2V to +2V	DC/AC	$\geq 200\text{k}\Omega$	50V	100V
	-20V to +20V	DC/AC	$\geq 200\text{k}\Omega$	50V	100V
BQ HSX	-200mA to +200mA	DC/AC	$\leq 1\Omega$	0.8A	1A
	-2A to +2A	DC/AC	$\leq 0.012\Omega$	7.5A	100A
	-5A to +5A	DC/AC	$\leq 0.012\Omega$	7.5A	100A
	-20V to +20V	DC/AC	$\geq 2\text{M}\Omega$	750V	1000V
	-200V to +200V	DC/AC	$\geq 2\text{M}\Omega$	750V	1000V
	-500V to +500V	DC/AC	$\geq 2\text{M}\Omega$	750V	1000V
BQ TRX Thermocouple	-50 $^{\circ}\text{C}$ to +760 $^{\circ}\text{C}$	J	$I_{\text{LK}} < 0.5\mu\text{A}$	Max 5V	Max 10V
	-58 $^{\circ}\text{F}$ to +1400 $^{\circ}\text{F}$	J			
	-200 $^{\circ}\text{C}$ to +1260 $^{\circ}\text{C}$	K			
	-328 $^{\circ}\text{F}$ to +2000 $^{\circ}\text{F}$	K			
	-200 $^{\circ}\text{C}$ to +1000 $^{\circ}\text{C}$	E			
	-328 $^{\circ}\text{F}$ to +1832 $^{\circ}\text{F}$	E			
	-50 $^{\circ}\text{C}$ to +1750 $^{\circ}\text{C}$	S			
	-58 $^{\circ}\text{F}$ to +2000 $^{\circ}\text{F}$	S			
	-200 $^{\circ}\text{C}$ to +400 $^{\circ}\text{C}$	T			
BQ TRX Thermoresistance	-200 $^{\circ}\text{C}$ to +850 $^{\circ}\text{C}$	Pt100	800 μA (*)	Max 5V	Max 10V
	-328 $^{\circ}\text{F}$ to +1562 $^{\circ}\text{F}$	Pt100	800 μA (*)		
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt250/Pt100	90 μA (*)		
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt250/Pt100	90 μA (*)		
	-200.0 $^{\circ}\text{C}$ to +200.0 $^{\circ}\text{C}$	Pt1000/Pt500	800 μA (*)		
	-328 $^{\circ}\text{F}$ to +392 $^{\circ}\text{F}$	Pt1000/Pt500	800 μA (*)		
	-60 $^{\circ}\text{C}$ to +180 $^{\circ}\text{C}$	Ni100	800 μA (*)		
	-76 $^{\circ}\text{F}$ to +356 $^{\circ}\text{F}$	Ni100	800 μA (*)		
BQ TRX Resistance	0 to 20 Ω	Ω	800 μA (*)	Max 5V	Max 10V
	0 to 200 Ω		90 μA (*)		
	0 to 2000 Ω		800 μA (*)		
	0 to 20.00k Ω		90 μA (*)		

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

RS422/RS485

RS422/RS485	(on request) Module: BR SX Bidirectional (static and dynamic variables). Display of data reception/transmission Multidrop, 2 or 4 wires 1000m Directly on the module by means of jumper 1 to 255, selectable by means of key-pad MODBUS RTU/JBUS	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
Serial output			Type SPDT (normally open) AC 1: 5A, 250VAC DC 12: 3A, 24VDC AC 15: 1,5A, 250VAC DC 13: 1,5A, 24VDC
LED		Relay output BOR5	4000 V _{RMS} output to measuring input, 4000 V _{RMS} output to power supply input. NPN transistor type V _{ON} 1.2 VDC/ max. 100 mA V _{OFF} 30 VDC max. By means of opto-couplers, 4000 V _{RMS} output to measuring input, 4000 V _{RMS} output to power supply input
Connections Distance Terminalization		Insulation	
Addresses		Open collector output	
Protocol Data (bidirectional) Dynamic (reading only)	Measurement, min value max value alarm status All programming parameters, min max reset reset of latch alarm 8 data bit, no parity, 1 stop bit	Insulation	
Static (reading/writing)			
Data format			
Baud rate	selectable 4800, 9600, 19200 and 38400 bit/s		
Insulation	By means of opto-couplers 4000 V _{ms} output to measuring inputs 4000 V _{ms} output to power supply input		
RS232	(on request) Module: BR SY Bidirectional (static and dynamic variables) 3 wires, max. 15m 1 start bit, 8 data bit, no parity, 1 stop bit Selectable 4800, 9600, 19200 and 38400 bit/s Same as RS422/485	Analogue output	(on request) Module: BO AV 0 to 20 mADC, 0 to 10 VDC Programmable within the whole retransmission range; it allows to manage the retransmission of all values from 0 to 20 mA / 0 to 10V ± 0.2% FS (@ 25°C ± 5°C) ≤ 10 ms ± 200 ppm/°C Load: 20 mA output 10 V output ≤ 700 Ω ≥ 10 kΩ By means of optocouplers 4000V _{ms} output to measuring input 4000V _{ms} output to power supply input The two outputs cannot be used at the same time
Serial output		Accuracy Response time Temperature drift Load: 20 mA output 10 V output Insulation	
Connections Distance Data format			
Baud rate			
Other features			
Alarm outputs	(on request)	Notes:	
Alarm type	Active alarm for out-of-range, up alarm, down alarm, down alarm with start-up deactivation, up alarm with latch, down alarm with latch Adjustable from 0 to 100% of displayed electric range 0 to 100% of displayed range 0 to 255 s 0 to 255 s Selectable: normally energized/de-energized 500 ms, with filter excluded, without alarm activation delay	Excitation output BQ LSE module Voltage Insulation	(on request) 13 VDC ±10% max. 50 mA 25V _{ms} output to measuring input 4000 V _{ms} output to power supply input
Alarm set-point			
Hysteresis			
On-time delay		BQ LSF module Voltage Insulation	25 VDC ±10% max. 25 mA 25V _{ms} output to measuring input 4000 V _{ms} output to power supply input
Off-time delay			
Output status			
Min response time			
Output channels	1 with BO R1 module (relay output). 2, independent with module BO R2 (2 relay outputs). 4, independent with BO R4 module (2 relay outputs + 2 open collector outputs). BOR5 (4 relay outputs)		

Software functions

Min / Max storage	Automatic storage (in the EEPROM) of the minimum and maximum measured value from the previous memory reset	Diagnostics	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.
Password 1st level 2nd level	Numeric code max 4 dgt 2 levels of data protection. 0 to 4999 completely protected. 5000 to 9999 access to programming is protected . Alarm set-points are directly programmable from the measuring mode.	Burn-out: TC RTD	
Measurement selection	Depending on the module: measuring range and type of probe (resistance, RTD thermoresistance, TC thermocouple) or measuring type (TRMS or DC).	Digital filter Filter operating range Filtering coefficient	0 to 1999 1 to 32
Integration time selection	Automatic or from 100.0 to 999.9 ms only in the current and voltage measurement.	Display selection	3 1/2 DGT or 3 DGT plus dummy zero
Scaling factor 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	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 displayable value. Selection of max displayable value.
		UdmSoft	Software for programming UDM35 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 and French. See also "Programming of UDM35 by means of PC".

General Specifications

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

Supply Specifications

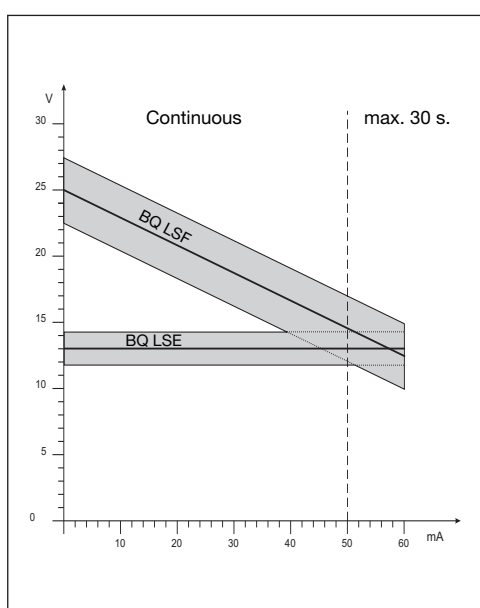
AC/DC voltage

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
UDM35 main unit		BD 35
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)

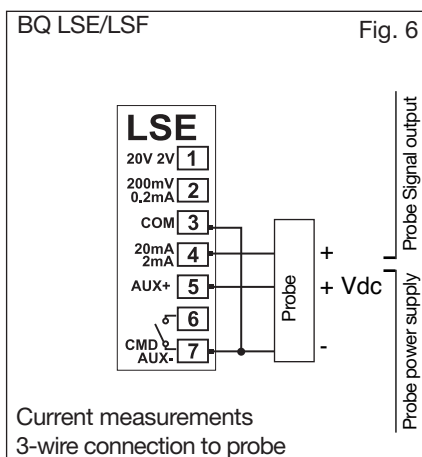
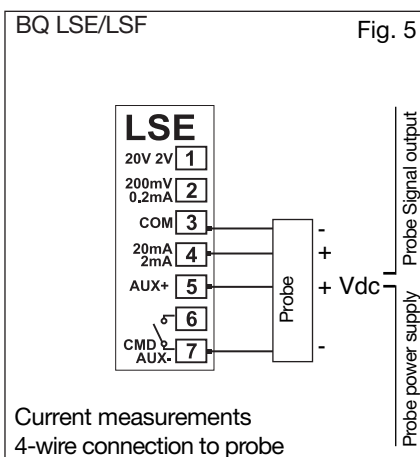
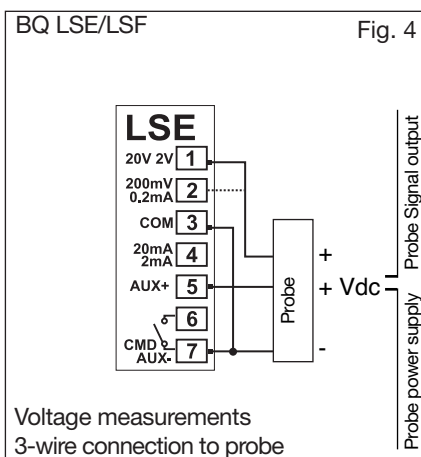
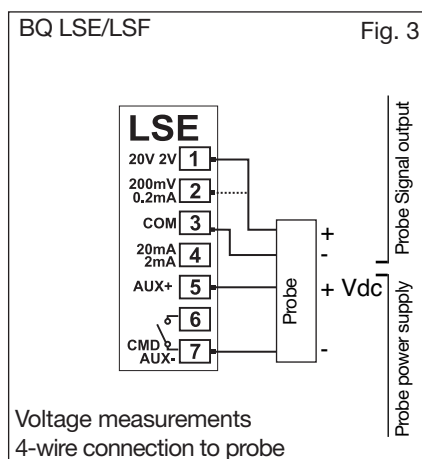
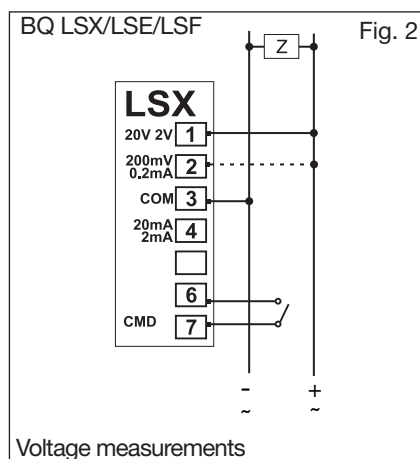
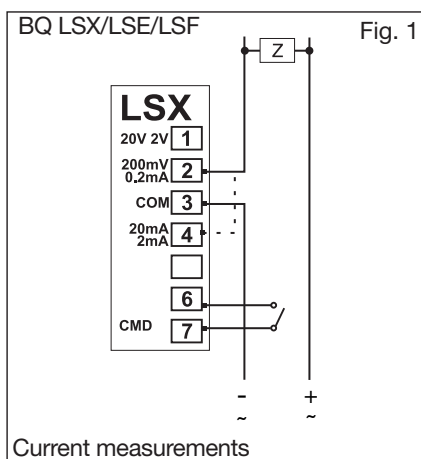
$$V_1 = \sqrt{\frac{1}{n} \cdot \sum_{i=1}^n (V_1)_i^2}$$

Instantaneous effective current (TRMS)

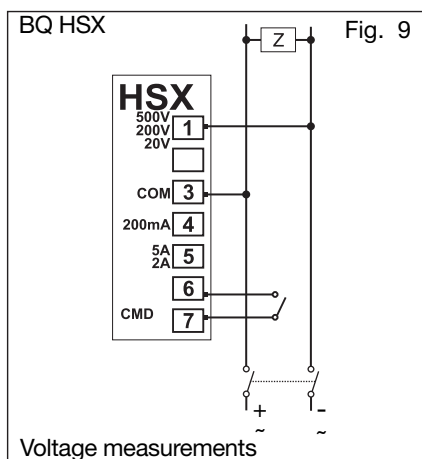
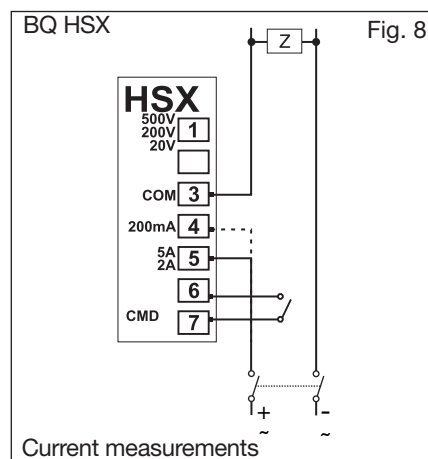
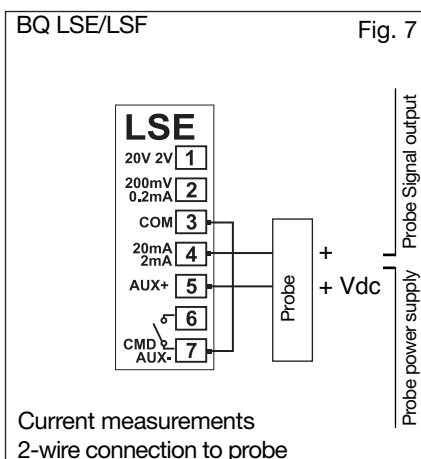
$$A_1 = \sqrt{\frac{1}{n} \cdot \sum_{i=1}^n (A_1)_i^2}$$

Wiring diagrams

Process signal wiring diagrams



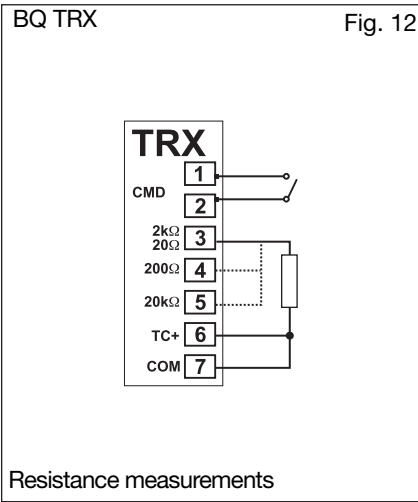
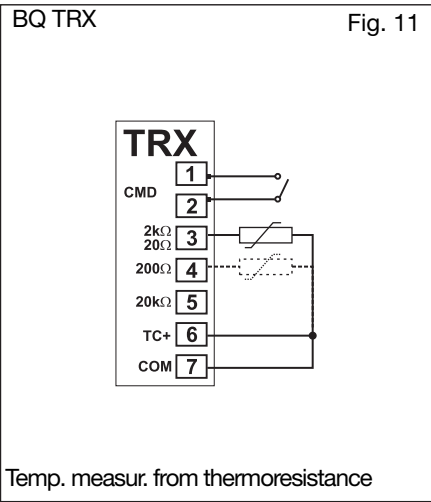
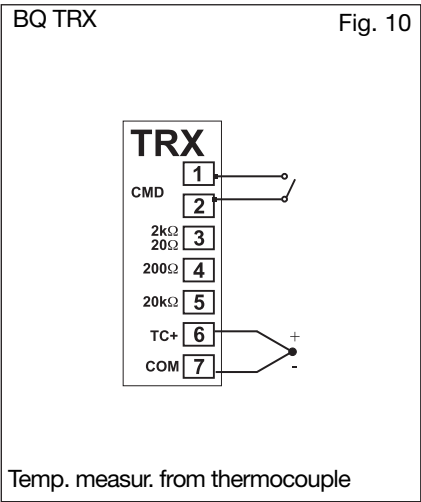
Wirings for high-level signals



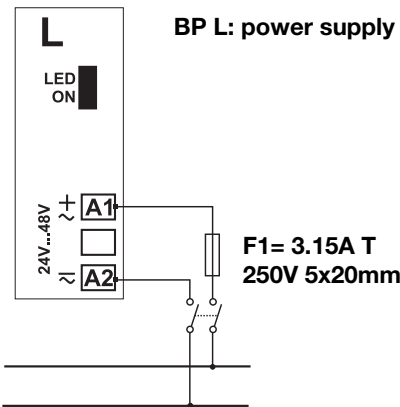
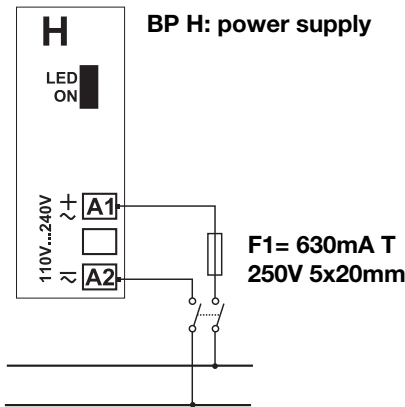


Wiring diagrams (cont.)

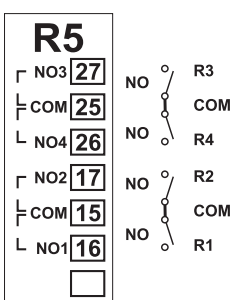
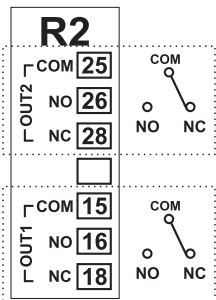
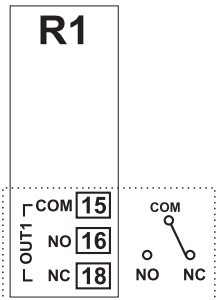
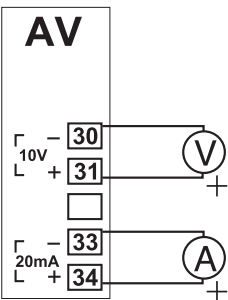
Wiring diagrams for temperature measurements



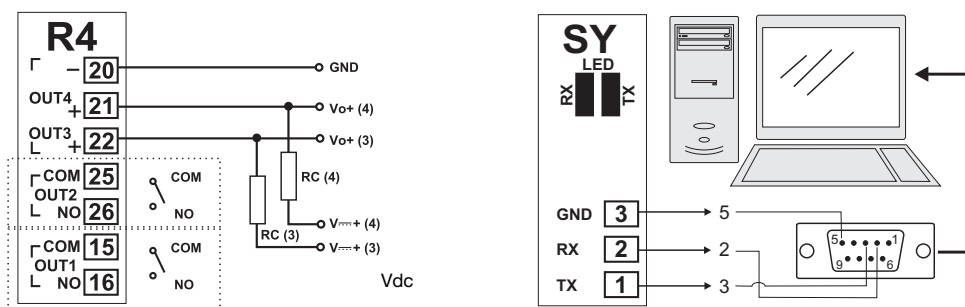
Wiring diagrams for power supply



Wiring diagrams of optional modules



Wiring diagrams of optional modules (cont.)



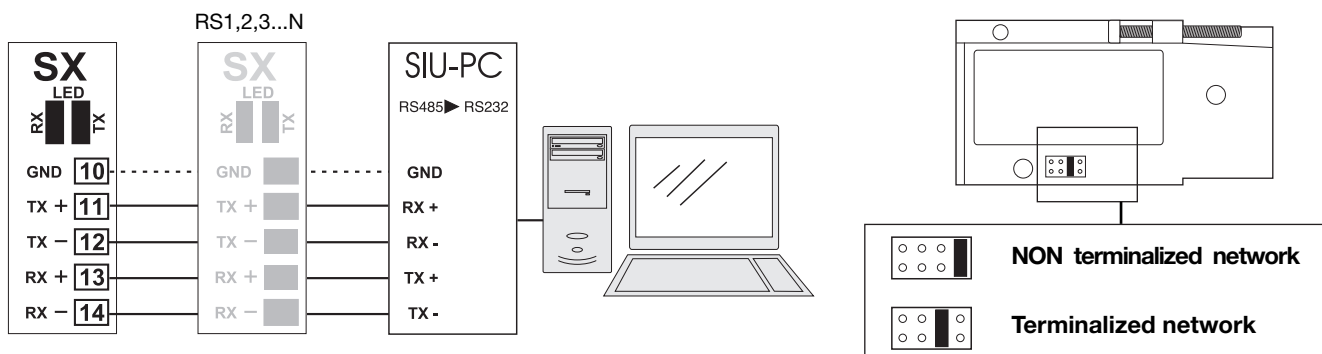
BO SY: RS232 direct connection to PC by means of COM port. RS232 has no termination.

BO R4: dual relay output + dual open collector output: the load resistances (R_C) 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

V_{o+} : positive output (open collector transistor).

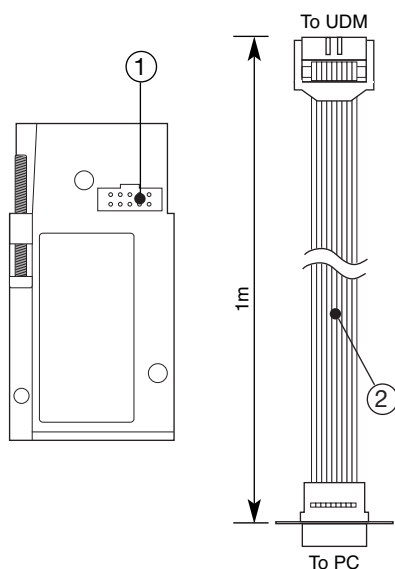
GND: ground collector (open collector transistor).



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 UDM35 by means of PC

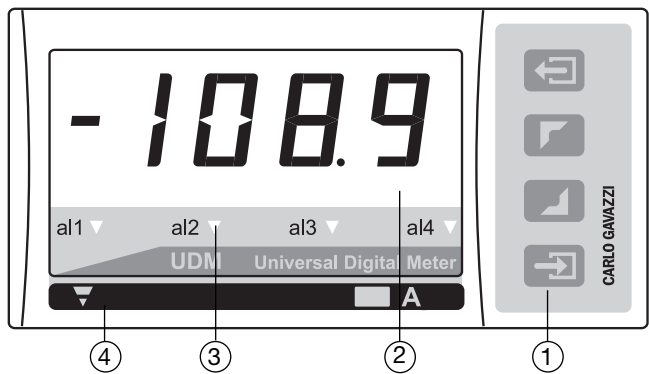


UDM35 is programmable by PC by means of the UdmSoft software (available on request). The user can program all parameters of UDM35 that will be subsequently uploaded and set in the instrument by the RS485 network (BR SX). Should UDM35 be without the RS485 serial module, all programming parameters will 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:
- 3 1/2 digit (max display 1999).
- Alphanumeric indications by means of LED display for:
- Display of configuration parameters;
 - The measured variable.

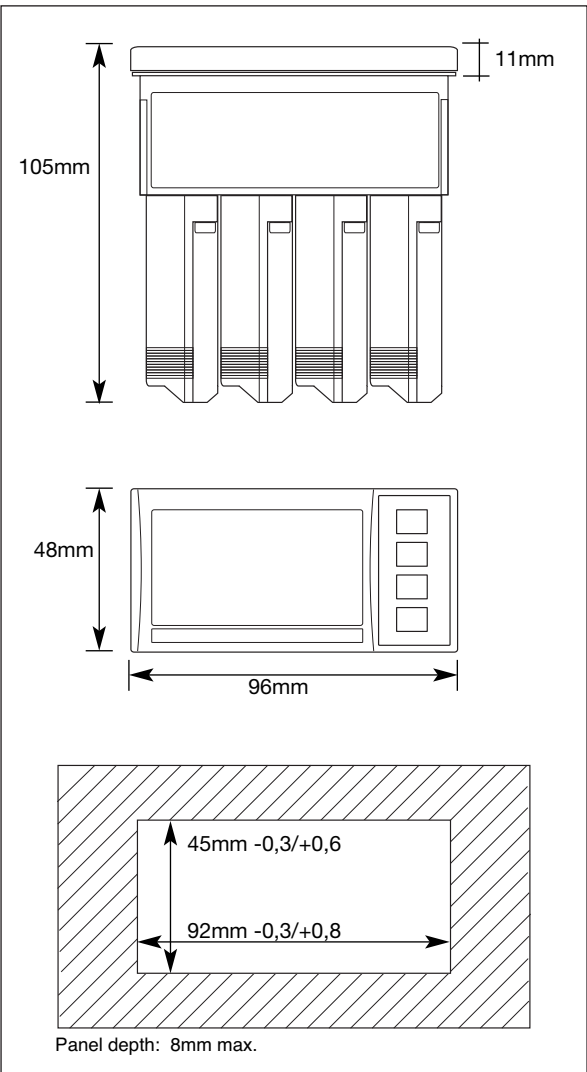
3. Alarm status LED

Display any alarm condition

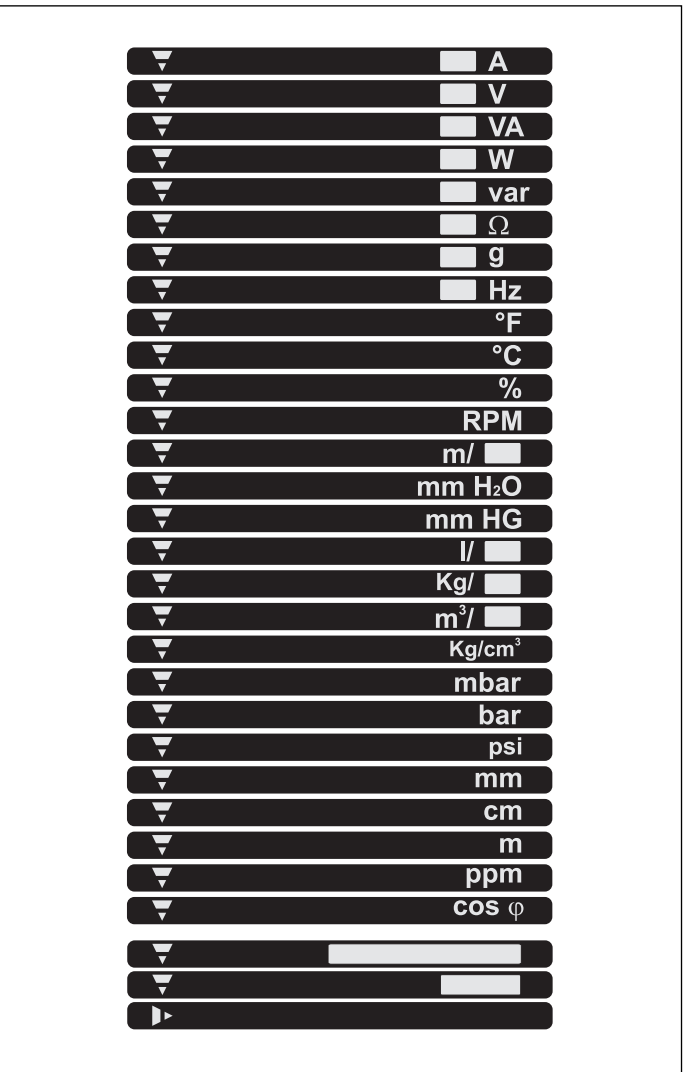
4. Engineering unit

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

Dimensions

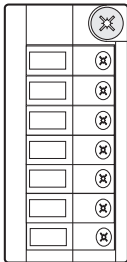


Engineering Units



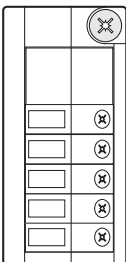
Modules

Input modules

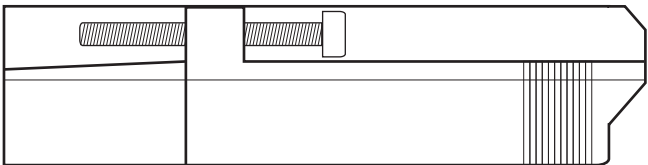


BQ LSX, BQ LSE, BQ LSF, BQ HSX, BQ TRX
Measuring inputs

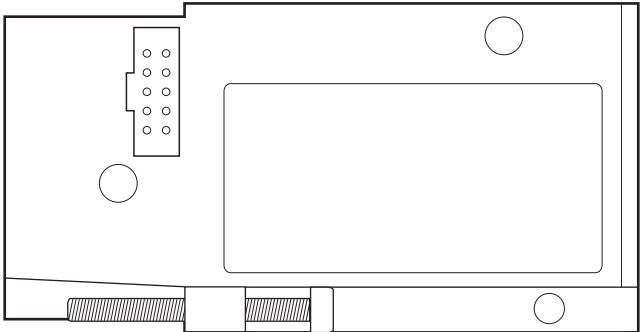
Output modules



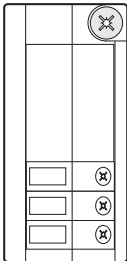
BO AV
Single analogue
output 10V, 20mA DC



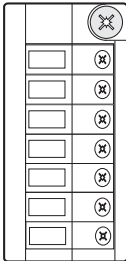
Scale 1:1



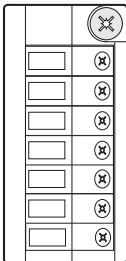
Output modules



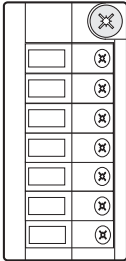
BO R1
Single relay output



BO R2
Dual relay output

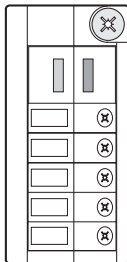


BO R4
Dual relay output +
Dual open collector

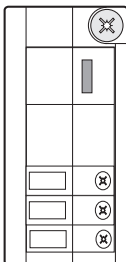


BO R5
4 relay outputs

Serial port modules

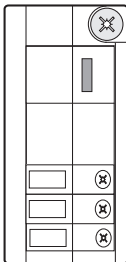


BR SX
RS485 Serial port

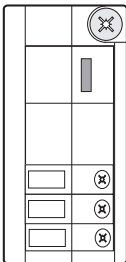


BR SY
RS232 Serial port

Power supply modules



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



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