Accuracy, excluding sensor	Max. deviation ±0.1% depending on selected range and type.
Cold junction compensation	Automatic, individual for each sensor, built into the connector. Range -30 °C to 50 °C, max. deviation ±0.4 C.
Connector	Type "mini". (Other types on request).
Cables	4m LIYY 4 x 0.14 (Other types on request).

Temperature thermistor 10k (sensor included)

Type designation	MU-TE100 (Other types on request).
Measuring range	-40 °C to +120 °C
Resolution	0.1 °C
Accuracy, including sensor	Max. deviation ±0.3 °C.
Time constant	5 to 40 seconds depending on type.
Connector	Mini-DIN
Cables	10m LIYY 2 x 0.14

Pulse

Type	Potential free contact, input not galvanically isolated or, Voltage pulse 4-24 V DC, isolated input 0.2 kV.
Max. frequency	16 Hz @ 50% duty cycle.
Min. pulse length	30 ms.
Engineering unit	Automatic division of sensor defined unit with time-unit. Time-unit is selectable in seconds, minute, hour, day, week. Sensor unit is defined when sensor is connected.

Frequency

Type	AC, not galvanically isolated.
Input level	Min 5V, max 8V RMS.
Input impedance	5 kohm.
Max frequency	100 Hz
Accuracy	Typ 0.5%

Time measurement

Type	Potential free contact, input not galvanically isolated. Voltage 4-24 V DC, isolated input 0.2kV.
Measurement resolution	1 second.
Engineering unit	Selectable presentation as hr/day, hr/wk, sec/min, min/hr or %.
Presentation resolution	Given by selected registration interval.

Status ON/OFF

Type	Potential free contact, input not galvanically isolated. Voltage 4-24 V DC, isolated input 0.2kV.
Minimum detection time	30ms.
Resolution	Given by selected registration interval (automatic glitch-detection, resolution 1 sec.)

The above specifications are valid for AT40, program version 1.6.
We reserve the right to make technical changes and improvements.

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Technical data - Mitec AT40g

Summary, specifications Mitec AT40g

Number of channels	8
Memory size	128 kB (AT31) or 512 kB (AT40g)
Registration interval	1 s to 24 h and manual, selectable in 17 steps
Storage method	Average value or average, min, max
Inputs	DC- and AC-voltage, DC- and AC-current, Resistance (e.g. Pt-100 or potentiometer). Thermocuople, thermistor, bridges, Pulses, run-time, frequency
Input selection	Automatic adaption. Engineering unit and signal type is shown in display
Data output	RS232 to computer. Centronics to plotter
Display	32 alphanumeric characters
Push buttons	6
Size	185 x 100 x 34 mm

General

Number of channels	8 (AT31 has 4 channels)
Memory size	128 kbyte or 512 kbyte (128 k in AT31)
Number of measured values	Nom. 58,000 or 240,000. Memory will be automatically allocated between used channels (58,000 in AT31)
CPU	V25 (-286). Clock frequency 9.6 MHz
Registration format	16 bits (2 bytes), including sign
Registration method	Average value only or average, min and max (AT31 only average)
Registration interval	1, 2, 5, 10, 15, 30 sec., 1, 2, 5, 10, 15, 30 min. 1, 2, 4, 6, 8, 12, 24 h and manual by button or external input.
Sample rate	Selectable between High (1 measurement/sec.) or Normal (reg. Interval 1-5 sec. Means 1 measurement / sec, interval 15 sec. To 15 min. means 5 measurements every registration. AT31 only Normal. A longer interval means one measurement every 3rd minute)
Time base	Calendar / clock is controlled by crystal.
Display	32 characters, alphanumeric LCD.
Beeper	Sound signals in case of faulty handling.
Languages	Maximum 10 different, selectable, using key pad. English, German and Swedish languages are standard.
Power supply	Battery: 9 V alkaline 6LR61 or corresponding lithium battery. External: 9-15 V DC. Eliminator 3W.
Battery durability	Depends on used battery type, measuring method and connected equipment. Example: approx 8 weeks at log interval 5 min., normal measuring mode, four temp. or voltage inputs using alkaline battery.
Battery warning	Both in display and as an acoustic signal. Five warning levels, beginning at 7 V (when approx. 80% of the capacity is consumed).
Power supply, sensor	Switched DC from battery. 1-8 V max 10mA/channel. Selectable supply delay time before measurement.
Power supply, transmitter	From external eliminator via individual inputs, 9-15 V, max. 50 mA/channel.
Operating temperature	-20 to +50°C. Non-condensing.

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Inputs

Types	DC/AC-voltage, DC/AC-current, resistance, thermocouples, bridges, pulse, frequency, run-time, status (ON/OFF).
Input selection	Automatic adaption.
Resolution mz.	12 bits, excluding sign.
Linearising	Automatically detected, individual for each type of sensor. Max 7th degree polynom.
Probe specification information	Signal type (unit type), engineering unit, type of sensor, linearising, type of supply and level.
Engineering units	Units according to SI-standard. Automatic handling of prefixes from f (femto 10^{-15}) to T (tera 10^{12}).
Max. input voltage	Destroying, ±20 V DC without signal cables
Max. V between inputs	Destroying, ±30 V DC without signal cables
Common mode range	±4 V DC without signal cables
CMRR	DC-input, typical 80dB.

Functions

Help function	Help key tagged with short instruction
Indication of ins. value	Direct display of measured value, type and unit
Data print out	Plotting of diagram. Selectable zoom in T and Y-direction
Status	Shows memory used, registration type etc.
Statistics	Shows average, min and max value.
Manual start/stop	Manual start/stop with confirming function.
Time base	Calendar/clock, resolution 1 s.
Channel dependent info	Manual connection/disconnection of sensor and setting of time-units.
Start conditions	Manual, time-start, start on external condition (level <, > and status).
Stop conditions	Manual, time-start, start on external condition (level <, > and status), stop when memory is full.
Time conditions	Registration interval and measuring frequency.
Registration method	Automatic on time, or manual by push button or external signal.
Peripherical units	Setting of connected device, communication parameters, etc.
Selection of language	Max. 10 different languages.
System information	Serial number and program version.
Reset	From push buttons.

Communication

Graphic plot output	Portable ink- and laser printers with HP PCL3 or later graphics language, via Centronics.
Computer	RS232 with multi-drop. Control command from the computer. Max. 38,400 baud.
Modem types	Telephone or short haul RS485 or RS422.
Telephone modem	External Hayes compatible. CCITT V22 is recommended.
Communication networks	Direct RS232 communication can be mixed with different modems.
Communication protocol	PcCom transmits collected information and on-line values. Block oriented with an 8-bit checksum and error correction. Used by the Mitec Monitor, WinLog and Mcom analysis programs.

Mechanics

Box	ABS, 185 x 100 x 34mm. Weight 450 g including battery.
Front	Polycarbonate, non-destructible text.
Push buttons	6, hermetically encapsulated membrane keys.
Connector, sensor	8, 9-pole mini-DIN, female.
Connector, peripheral units	25-pole, D-sub male, combined Centronics, RS232.
Connector, DC-supply	3.5mm, 2-pole telephone plug.

SmartCable™ input specifications

DC-voltage

Type	Single-ended or differential depending on signal cable.
Measuring range	Selectable, 50mV to 50V.
Resolution	Better than ±0.1% of selected range.
Accuracy	Max. deviation ±0.2% of selected range.
Input impedance	Max. 50 Mohm, depending on signal cable type.
Polarity	Unipolar or bipolar.

AC-voltage

Type	Showing RMS.
Frequency	25 to 150 Hz.
Measuring range	Selectable, 100mV to 50V.
Resolution	Better than ±0.1% of selected range.
Accuracy	Max. deviation ±0.2% 2 mV of selected range.
Input impedance	> 0.2 Mohm

DC-current

Measuring range	Selectable, 50 to 100mA. Higher is available with external shunt resistor.
Resolution	Better than ±0.1% of selected range.
Accuracy	Max. deviation ±0.2% of selected range.
Input impedance	10 ohm to 2kohm depending on selected range. 50 ohm at 0-20/4-20mA.
Polarity	Unipolar or bipolar.

AC-current

Type	Showing RMS.
Frequency	25 to 150Hz.
Measuring range	Selectable, 50 µA to 100mA. Higher available with external shunt resistor
Resolution	Better than ±0.1% of selected range.
Accuracy	Max. deviation ±0.3% of selected range.
Input impedance	10 ohm to 2 kOhm depending on selected range.

Resistance

Type	Resistor, potentiometer, thermistor.
Measuring range	10 Ohm to 1 MOhm.
Resolution	Better than ±0.1% of selected range.
Accuracy	Max. deviation ±0.3% for 10 Ohm to 100 kOhm, and max. deviation ±1% for 100 kOhm to 1 MOhm.

Temperature Pt-100

Type	Resistive sensor, platinum 100 4-wire connection.
Designation	MU-TPxxx (Different ranges available on request).
Measuring range	Selectable, standard is -50 to 250 °C.
Resolution	Better than ±0.1 °C.
Accuracy, excluding sensor	Max. deviation ±0.3%

Temperature thermocouples

Types	All
Measuring range	Selectable. Max. type K, -100 °C to 1200 °C Min type J, -50 °C to 250 °C; Max. type T, -100 °C to +300 °C
Resolution	Better than ±0.1% of selected range.