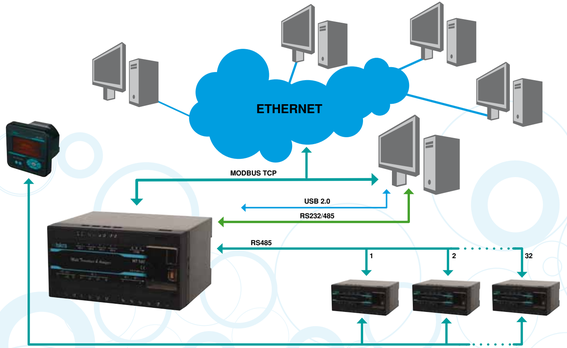
Measuring transducers MT/UMT 51x

POWER TRANSDUCER MT/UMT 510 & RECORDER MT/UMT 511

- All single-phase AC network measurements
- Voltage and current auto range measurements up to 600 V_{L-N}, 12.5 A
- Wide frequency measurement range 16 - 400 Hz
- Power accuracy class 0.2 (IEC-688)
- 8MB flash internal memory; (U)MT 511 only
- Recording of up to 8 measurands and 16 alarms in the internal memory (8 MB flash); (U)MT 511 only
- Serial or Ethernet and USB communication
- Up to two I/O modules (analogue output, alarm output, pulse output, digital input, digital output)
- Powerful analogue out; 6 voltage and current ranges, non-linear characteristics…
- User-friendly PC setting software (MiQen)

CURRENT TRANSDUCER MT/UMT 518 AND VOLTAGE TRANSDUCER MT/UMT 516

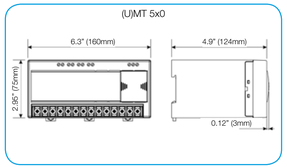
- True RMS AC current (U)MT 518 and AC voltage (U)MT 516 measurements
- Current auto range measurements up to 12.5 A (U)MT 518
- Voltage auto range measurements up to 600 V_{L-N} (U)MT 516
- Wide frequency measurement range 16 - 400 Hz
- High accuracy class 0.2 (IEC-688), 0.1 on communication
- Serial or Ethernet and USB communication
- Up to two I/O modules (analogue output, alarm output, digital output, digital input)
- Powerful analogue out; 6 voltage and current ranges, non-linear characteristics…
- User-friendly PC setting software (MiQen)



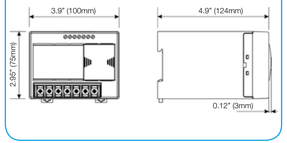
Ordering code and Dimensional drawings

DIMENSIONAL DRAWINGS

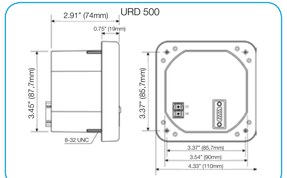
(U)MT 5x0



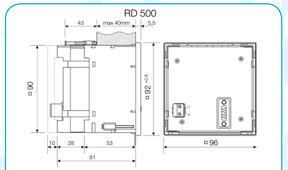
(U)MT 51x



URD 500



RD 500



ORDERING CODE

An example of completely filled-in ordering code:

MT560 - 1 1 1 4 1 2 5 2

Transducer Type
MT 560, UMT 560 MT 550, UMT 550
MT 540, UMT 540 MT 518, UMT 518
MT 516, UMT 516 MT 514, UMT 514
MT 511, UMT 511 MT 510, UMT 510

Power Supply
1 universal high
2 universal low

Communication (COM1)
1 RS232/485
2 USB
3 Ethernet + USB

Communication (COM2)
0 Without ((U)MT 560, (U)MT 550, (U)MT 540)
1 RS485 over 4th I/O module ((U)MT 560, (U)MT 550, (U)MT 540)
2 Remote display port ((U)MT 560, (U)MT 550, (U)MT 540)

I/O modules 1 & 2
0 Without
1 Alarm (digital) output
2 Analogue output
3 Pulse output ((U)MT 560, (U)MT 550, (U)MT 540, (U)MT 511, (U)MT 510)
4 Tariff input ((U)MT 560, (U)MT 550, (U)MT 540)
5 Digital input
6 Analogue input ((U)MT 560, (U)MT 550, (U)MT 540)
7 Pulse input ((U)MT 560, (U)MT 550, (U)MT 540)

I/O module 3
0 Without ((U)MT 560, (U)MT 550, (U)MT 540)
1 Alarm (digital) output ((U)MT 560, (U)MT 550, (U)MT 540)
2 Analogue output ((U)MT 560, (U)MT 550, (U)MT 540)
3 Pulse output ((U)MT 560, (U)MT 550, (U)MT 540)
4 Digital input ((U)MT 560, (U)MT 550, (U)MT 540)
5 Analogue input ((U)MT 560, (U)MT 550, (U)MT 540)
6 Pulse input ((U)MT 560, (U)MT 550, (U)MT 540)

I/O module 4
0 Without ((U)MT 560, (U)MT 550, (U)MT 540)
1 Alarm (digital) output ((U)MT 560, (U)MT 550, (U)MT 540)
2 Analogue output ((U)MT 560, (U)MT 550, (U)MT 540)
3 Pulse output ((U)MT 560, (U)MT 550, (U)MT 540)
4 Digital input ((U)MT 560, (U)MT 550, (U)MT 540)
5 Additional COM2 ((U)MT 560, (U)MT 550, (U)MT 540)
6 Analogue input ((U)MT 560, (U)MT 550, (U)MT 540)
7 Pulse input ((U)MT 560, (U)MT 550, (U)MT 540)

Energy accuracy
1 Active / reactive; cl.1 / cl.2 ((U)MT 560, (U)MT 550, (U)MT 540)
2 Active / reactive; cl.0.5S / cl.0.5 ((U)MT 560, (U)MT 550, (U)MT 540)

Iskra MIS
Ljubljanska c. 24a, SI - 4000 Kranj, Slovenia
Tel.: +386 4 23 72 112, Fax: +386 4 23 72 129
E-Mail: info@iskra-mis.si, www.iskra-mis.si

Published by Iskra MIS, d. d. • Version 1.0, March 2010 • design Nimbus d.o.o.

Multifunctional measuring transducers

Power quality analysis, class 0.2, wide selection of programmable inputs/outputs

Measuring transducers MT/UMT 5x0

Measuring transducer MT/UMT 5x0 are intended for measuring, analysing and monitoring a single-phase or three-phase electrical power network. Transducers MT/UMT 51x are intended for measuring and monitoring single-phase electrical power network. The instruments measure a RMS value by means of fast sampling of voltage and current signals, which makes them suitable for the acquisition of transient events. A built-in microcontroller calculates measurands (voltage, current, frequency, energy, power, power factor, THD phase angles, THD U, THD I, MD, etc.) from the measured signals.

TRANSDUCER & ANALYZER MT/UMT 560

- Evaluation of the electricity supply quality in compliance with EN 50160
- Voltage and current auto range measurements up to 600 V_{L-N}, 12.5 A
- Wide measurement frequency range 16 - 400 Hz
- Power accuracy class 0.2 (IEC-688), 0.1 on communication
- 32 adjustable alarms
- Up to three independent communication ports (Serial, Ethernet and USB communication)
- Up to four I/O modules (analogue output, alarm output, pulse output, digital output, digital input, tariff input, analogue input, pulse input)
- Powerful analogue output; 6 voltage and current ranges, non-linear characteristics…
- User-friendly PC setting software (MiQen)

TRANSDUCER & RECORDER MT/UMT 550

- Voltage and current auto range measurements up to 600 V_{L-N}, 12.5 A
- Wide measurement frequency range 16 - 400 Hz
- Power accuracy class 0.2 (IEC-688), 0.1 on communication
- 32 adjustable alarms
- Up to three independent communication ports (Serial, Ethernet and USB communication)
- Up to four I/O modules (analogue output, alarm output, pulse output, digital output, digital input, tariff input, analogue input, pulse input)
- Powerful analogue out; 6 voltage and current ranges, non-linear characteristics…
- User-friendly PC setting software (MiQen)

MULTIFUNCTION TRANSDUCER MT/UMT 540

- Measurements of instantaneous values of more than 140 quantities
- Power accuracy class 0.2, 0.1 on communication
- Measurements of 40 minimal and maximal values in different time periods
- 32 adjustable alarms
- Wide measurement frequency range 16 - 400 Hz
- RS232/485 or Ethernet or Ethernet & USB communication
- Up to four I/O modules (analogue output, alarm output, pulse output, digital input, tariff input, analogue input, pulse input)
- Automatic range of nominal current and voltage (max. 12.5 A and 600 V_{L-N})
- Adjustable tariff clock, display of electric energy consumption in selected the currency
- User-friendly PC setting software (MiQen)

REMOTE DISPLAY RD/URD 500

A remote display is very useful for a quick look-up to all measured parameters or for setting up the MT/UMT 5x0 measuring transducers without the PC.
A graphical display with the resolution of 128x64 enables graphical representation of signals and parameters. With five select buttons. It is possible to browse through the user-friendly menu.

- Network connection for up to 32 transducers
- RS485 communication
- Universal power supply 48-276 V AC, 20-300 V DC
- Graphical LCD 128 x 64 dots
- Multilingual support

Family of MT/UMT 5x0 measuring transducers

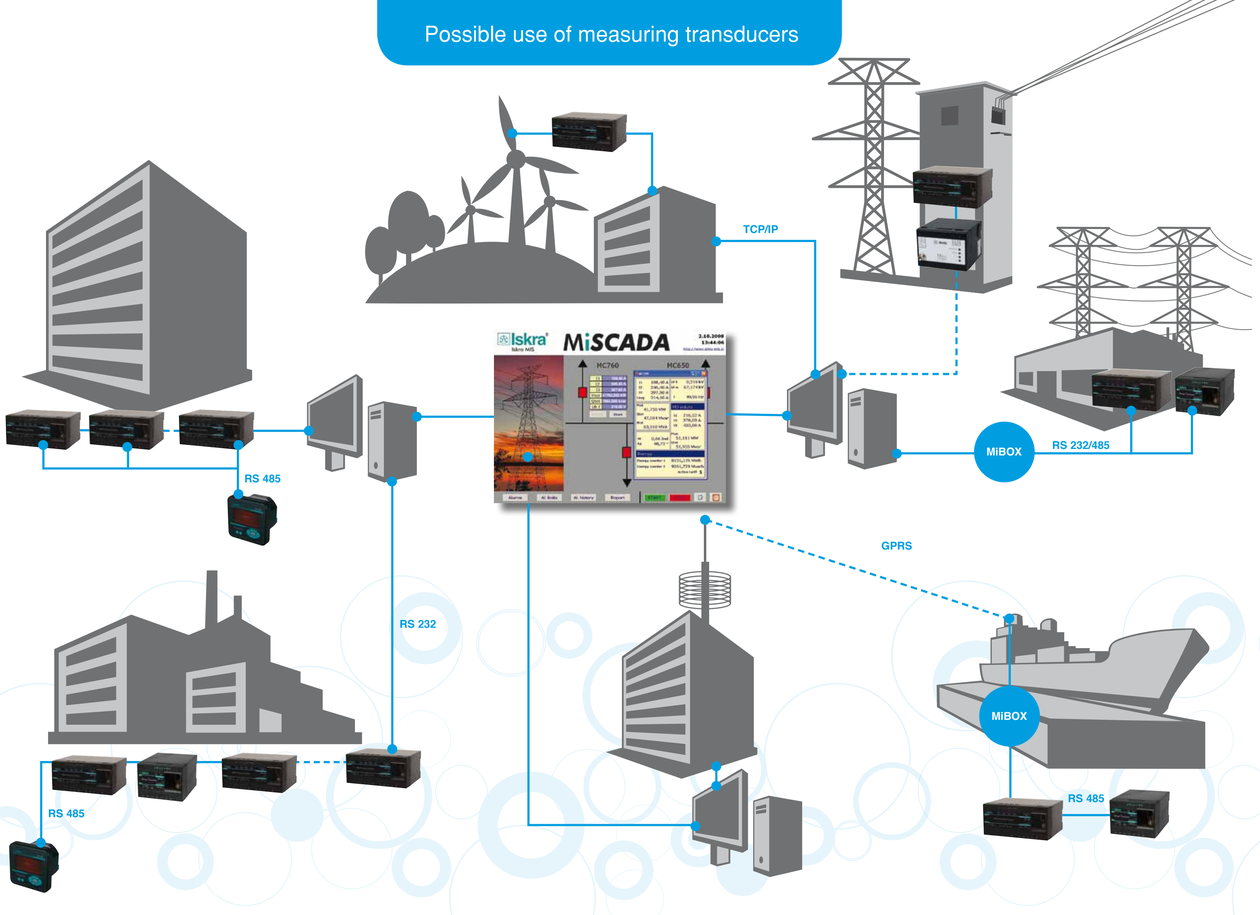
Instrument description	Multifunction Transducer	Transducer & Recorder	Transducer & Analyzer
Housing			
DIN type	MT 540	MT 550	MT 560
ANSI type	UMT 540	UMT 550	UMT 560
Hardware Configuration			
Accuracy class (typical, of reading), %	0.2	0.2	0.2
Power supply	Uni-LO / Uni-HI *	Uni-LO / Uni-HI *	Uni-LO / Uni-HI *
Energy counters	4	4	4
Real time clock	•	•	•
Remote display connection ***	•	•	•
FLASH memory size	-	8 MB	8 MB
Autorange current	•	•	•
Autorange voltage	•	•	•
Input Range			
Current – In = 5 A, max. 12 A	•	•	•
Voltage – Un = 500V $_{L-N}$, max. 750 V $_{L-N}$ sin	•	•	•
Frequency – 16 2/3 Hz or 45 to 65 Hz or 300 Hz or 400 Hz	•	•	•
Communication			
Communication ports	1 standard + 1 optional ***	1 standard + 1 optional ***	1 standard + 1 optional ***
Comm. type: Serial (RS485 + RS232)/Ethernet /USB/ Ethernet & USB **	• / • / • / •	• / • / • / •	• / • / • / •
Comm. protocol: Modbus (RTU, TCP) and DNP3	• / •	• / •	• / •
Inputs/Outputs			
I/O 1: AN / DI / DO / PO / TI / AL / AI / PI	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○
I/O 2: AN / DI / DO / PO / TI / AL / AI / PI	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○ / ○ / ○
I/O 3: AN / DI / DO / PO / TI / AL	○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○
I/O 4: AN / DI / DO / PO / TI / AL / COM2**	○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○	○ / ○ / ○ / ○ / ○ / ○
Available Functions			
Programmable refresh time (Communication)	•	•	•
MD calculation (TF, FW, SW)	•	•	•
Tariff clock	•	•	•
Cost management	•	•	•
Programmable alarms	32	32	32
Alarms recording	-	•	•
Measurements recording	-	•	•
Power supply quality EN 50160	-	-	•
PC-Software	MiQen	MiQen	MiQen
Available Measurements			
Actual values: U, I, P, Q, S, PF, PA, f, φ	•	•	•
Energy	•	•	•
Maximum demands	•	•	•
Minimum values: U, I, P, Q, S, PF, PA, f, φ	•	•	•
Maximum values: U, I, P, Q, S, PF, PA, f, φ	•	•	•
THD	•	•	•
Harmonics	31st	31st	63rd

* Uni-LO: low voltage (48...77 V AC, 19...70 V DC); Uni-HI: high voltage (80...276 V AC, 70...300 V DC)
** With some limits (see User's Manual MT/UMT 5x0)
*** The optional communication port (COM2) excludes the remote LED display connection and supports only RS485 serial communication type through the 4th I/O connector

Legend:

-	- feature not supported	AN	- analogue output	PO	- pulse output
•	- standard feature	DI	- digital input	PI	- pulse input
○	- optional feature	DO	- digital output	TF	- thermal function
/	- or	AL	- alarm output	TI	- tariff input
		AI	- analogue input	FW	- fixed window
		SW	- sliding window		

Possible use of measuring transducers



Family of MT/UMT 51x measuring transducers

Instrument description	Power Transducer	Power transducer & Recorder	Voltage Transducer	Current Transducer
Housing				
DIN type	MT 510	MT 511	MT 516	MT 516
ANSI type	UMT 510	UMT 511	UMT 516	UMT 518
Hardware Configuration				
Accuracy class (typical, of reading), %	0.2	0.2	0.2	0.2
Power supply	Uni-LO / Uni-HI *	Uni-LO / Uni-HI *	Uni-LO / Uni-HI *	Uni-LO / Uni-HI *
Energy counters	4	4	4	4
Real time clock	-	•	-	-
FLASH memory size	-	8 MB	-	-
Autorange current	•	•	-	•
Autorange voltage	•	•	•	-
Input Range				
Current – In = 5 A, max. 15 A	•	•	•	•
Voltage – Un = 500V $_{L-N}$, max. 1.2 × U_N permanently, 2 × U_N 10s	•	•	•	•
Frequency – 16 2/3 Hz or 45 to 65 Hz or 300 Hz or 400 Hz	•	•	•	•
Communication				
Communication ports	2 standard	2 standard	2 standard	2 standard
Comm. type: Serial RS485 and RS232 / Ethernet / USB	• / ○ / ○	• / ○ / ○	• / ○ / ○	• / ○ / ○
Comm. protocol: Modbus (RTU, TCP)	•	•	•	•
Inputs/Outputs				
I/O 1: AN / AL / PO / DI	○ / ○ / ○ / ○	○ / ○ / ○ / ○	○ / ○ / - / ○	○ / ○ / - / ○
I/O 2: AN / AL / PO / DI	○ / ○ / ○ / ○	○ / ○ / ○ / ○	○ / ○ / - / ○	○ / ○ / - / ○
Available Functions				
MODBUS protocol	•	•	•	•
MD calculation	•	•	-	-
Programmable alarms	16	16	16	16
Alarms recording	-	•	-	-
Measurements recording	-	•	-	-
PC-Software	MiQen	MiQen	MiQen	MiQen
Available Measurements				
Actual values: U / I	• / •	• / •	• / -	- / •
Actual values: P / Q / S / PF / f / φ	• / • / • / • / • / •	• / • / • / • / • / •	- / - / - / - / - / -	- / - / - / - / - / -
Energy	•	•	-	-
Maximum demands	•	•	•	•
THD of phase voltage	•	•	•	-
THD of phase current	•	•	-	•

* Uni-LO: low voltage (48...77 V AC, 19...70 V DC); Uni-HI: high voltage (80...276 V AC, 70...300 V DC)

Legend:

-	- feature not supported	AN	- analogue output
•	- standard feature	AL	- alarm output
○	- optional feature	DI	- digital input
/	- or	PO	- pulse output
		DO	- digital output