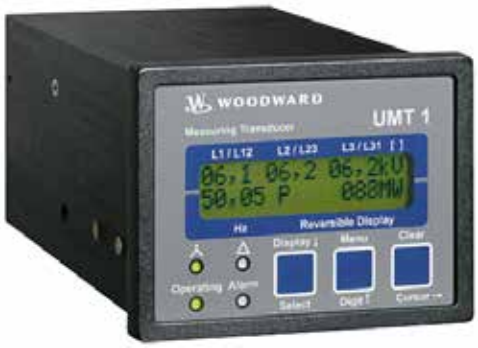


UMT 1

Measuring Transducer

APPLICATIONS

The UMT 1 is a measuring transducer for true RMS values. The UMT 1 can measure an electrical three-phase system with current and voltage measuring inputs. The primary measured values are calculated and displayed on the two-line, 16 character LC Display, and also transmitted by either analog outputs (configurable as -20 to 20 mA, 0 to 20 mA, or 4 to 20 mA) or a communication interface to a higher level-control system.

The primary measured values of voltage and current are used to calculate the values for real, reactive, and apparent power, power factor (cosphi), kWh, and kvarh. The kWh and kVarh can also be transmitted by using an pulse output.

The list of measured values includes

- Measured
  - Voltage
    - § Wye: V_{L1N} / V_{L2N} / V_{L3N}
    - § Delta: V_{L12} / V_{L23} / V_{L31}
  - Frequency f_{L123}
  - Current I_{L1}/I_{L2}/I_{L3}

- Calculated
  - Average voltage $V_{ØL123}$ / V_{min} / V_{max}
  - Average current $I_{ØL123}$ / I_{min} / I_{max}
  - Real power P_{Total} / P_{L1} / P_{L2} / P_{L3}
  - Reactive power Q_{total}
  - Apparent power S_{total}
  - Power factor $cos\varphi_{L1}$
  - Active energy $kWh_{positive/negative}$
  - Reactive energy $kvarh_{leading/lagging}$

DESCRIPTION

There are different UMT 1 packages to choose from:

Package UMT 1/A3

- 3× true RMS voltage sensing
- 3× true RMS current sensing
- Class 0.5 accuracy
- **3** config. analog outputs (20 mA)
- 1 config. pulse output for kWh/kvarh
- Two-line LC display

Package UMT 1/A3SU

- 3× true RMS voltage sensing
- 3× true RMS current sensing
- Class 0.5 accuracy
- **3** config. analog outputs (20 mA)
- 1 config. pulse output for kWh/kvarh
- Two-line LC display
- **RS-485/Modbus RTU**

Package UMT 1/A6

- 3× true RMS voltage sensing
- 3× true RMS current sensing
- Class 0.5 accuracy
- **6** config. analog outputs (20 mA)
- 1 config. pulse output for kWh/kvarh
- Two-line LC display

- True RMS sensing
- Class 0.5 accuracy
- All values displayed on LCD and through 20 mA analog output
- Front panel configurable[1)]
- Microprocessor technology for accurate, repeatable and reliable operation
- Optional wiring configurations for either single phase, three phase, or a combination of both
- RS-485 Modbus RTU Slave communication
- UL/cUL Listed
- CE marked

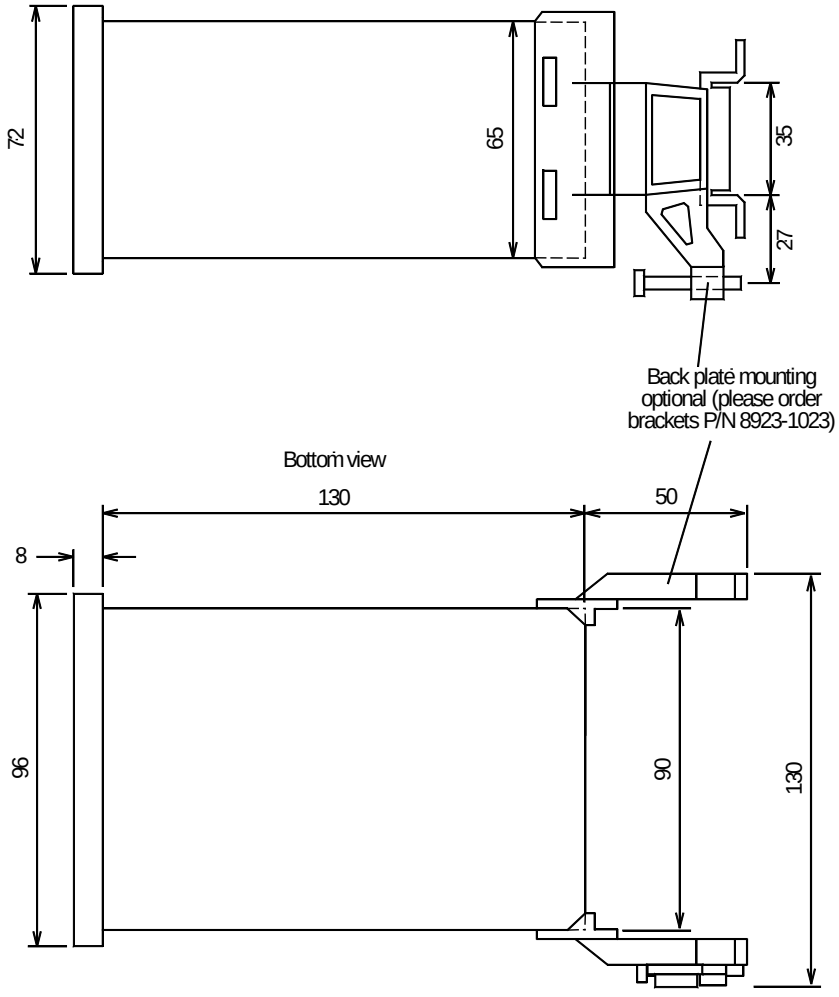
[1)] Remote configuration via PC is not available

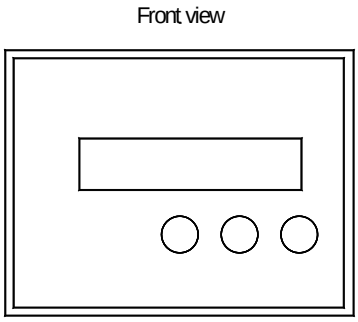
SPECIFICATIONS

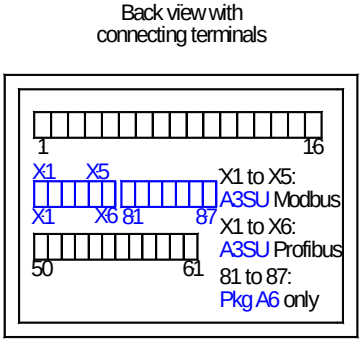
Accuracy			Class 0.5
Power supply			24 Vdc (18 to 30 Vdc)
Intrinsic consumption			max. 10 W
Ambient temperature (operation)			-20 to 70 °C
Ambient humidity			95 %, non-condensing
Voltage	Rated value U_N/D:	[1] 66/115 Vac	or [4] 230/400 Vac
	Maximum value (V_{max}):	[1] 150 Vac	or [4] 300 Vac
	Rated voltage $V_{ph\text{-}ground}$:	[1] 150 Vac	or [4] 300 Vac
	Rated surge voltage:	[1] 2.5 kV	or [4] 4.0 kV
Measuring frequency			40 to 80 Hz
Linear measuring range			$1.3 \times V_{rated}$
Input resistance			[1] 0.21 MW, [4] 0.7 MW
Max. power consumption per path			0.15 W
Current (I_{rated})			[1] ../1 A, [5] ../5 A
Linear measuring range			$1.5 \times I_{rated}$
Max. power consumption per path			< 0.15 VA
Rated short-time current (1 s)			[1] 50 × I_{rated}, [5] 10 × I_{rated}
Pulse outputs			transistor output
Rated gate voltage			24 Vdc
Maximum gate voltage			32 Vdc
Minimum gate current			10 mAdc
Maximum gate current			30 mAdc (0.5 Vdc)

Analog output	isolated
Type	-20/0/4 to 20 mA, freely scaleable
Resolution PWM	12 Bit
Max. load	500 W
Housing	Type APRANORM DIN 43 700
Dimensions	96×72×130 mm
Front cutout	91[+1.0]×67[+0.7] mm
Connection	screw/plug terminals depending on connector 1.5 mm² or 2.5 mm²
Front	insulating surface
Protection system	with correct installation
Front	IP42 (sealed IP54; gasket kit = P/N 8923-1036)
Back	IP21
Weight	depending on version, approx. 800 g
Disturbance test (CE)	tested according to applicable EN guidelines
Listings	UL/cUL listed (File No.: E231544)

DIMENSIONS

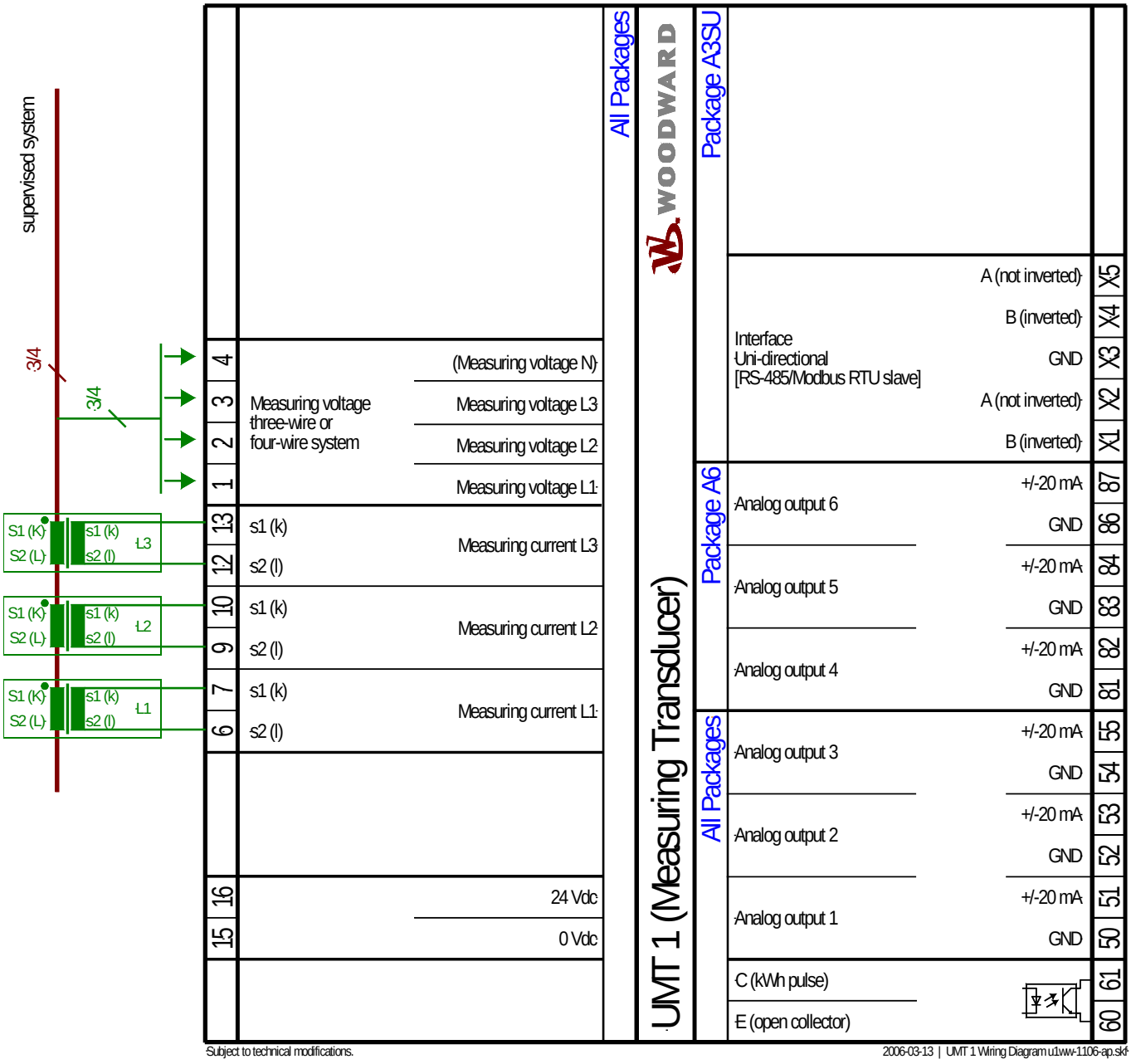






2005-08-30 / UMT 1 Dimensions u1ww-3505-ab.skf

WIRING DIAGRAM



PART NUMBERS

UMT 1 Series Measuring Transducer Packages	UMT 1/A3	UMT 1/A3SU RS-485 Modbus RTU Slave	UMT 1/A6
100 V, ../1A	-	8444-1022	LR 21296
100 V, ../5A	-	8444-1002	8444-1019
400 V, ../1A	-	-	LR 21159
400 V, ../5A	LR 20949	8444-1009	8444-1057

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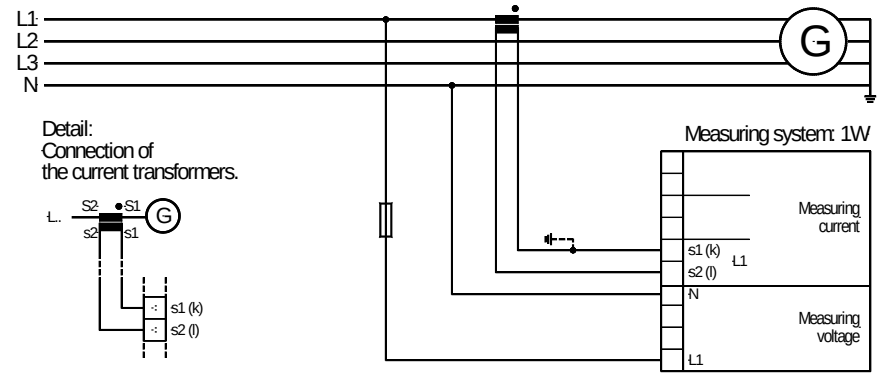
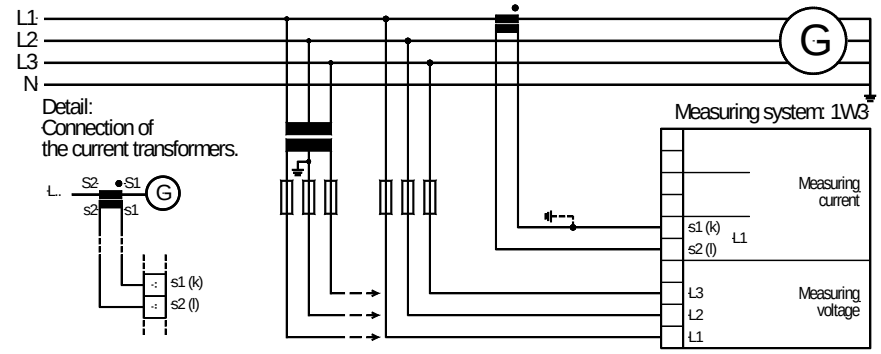
TYPICAL APPLICATIONS (configurable)

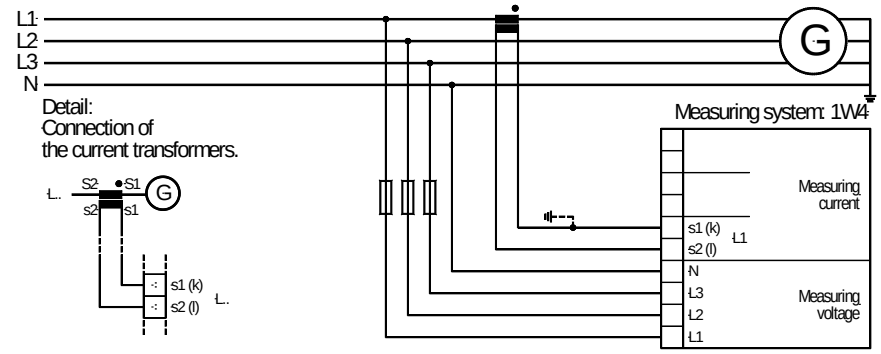
Measuring system 1W



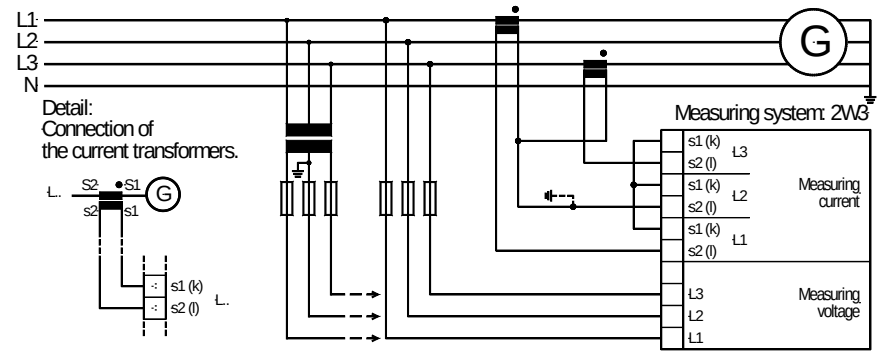
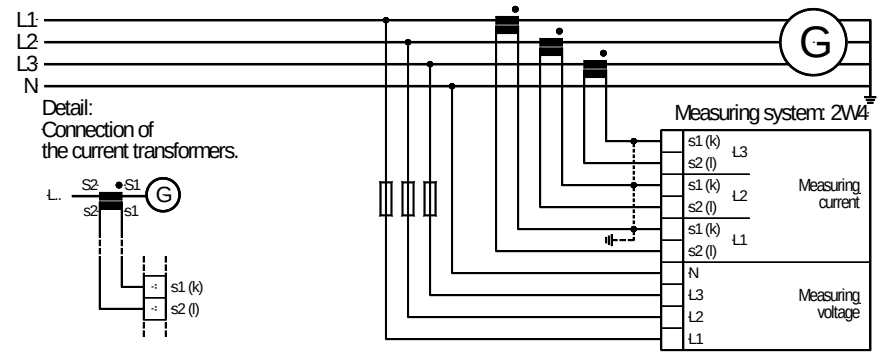
Measuring system 1W3



Measuring system 1W4



Measuring system 2W3



Measuring system 2W4