

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 be 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 $V_{\phi L123} / V_{min} / V_{max}$
 - Average current $I_{\phi L123} / I_{min} / I_{max}$
 - Real power $P_{Total} / P_{L1} / P_{L2} / P_{L3}$
 - Reactive power Q_{total}
 - Apparent power S_{total}
 - Power factor $\cos\phi_{L1}$
 - 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 Slave or Profibus DP

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

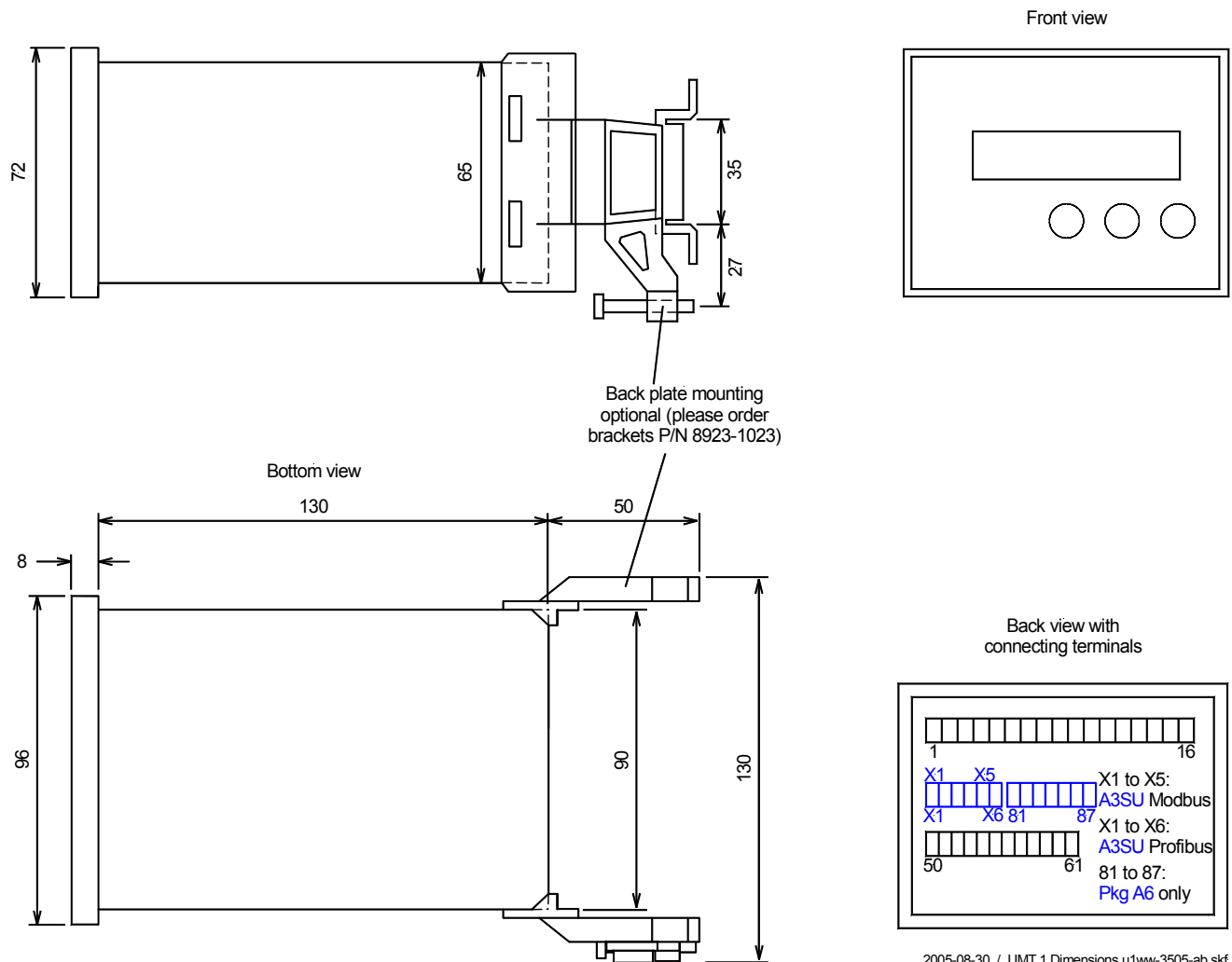
- True RMS sensing
- Class 0.5 accuracy
- All values displayed on LCD and through 20 mA analog output
- Front panel configurable
- Microprocessor technology for accurate, repeatable and reliable operation
- Optional wiring configurations for either single phase, three phase, or a combination of both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

SPECIFICATIONS

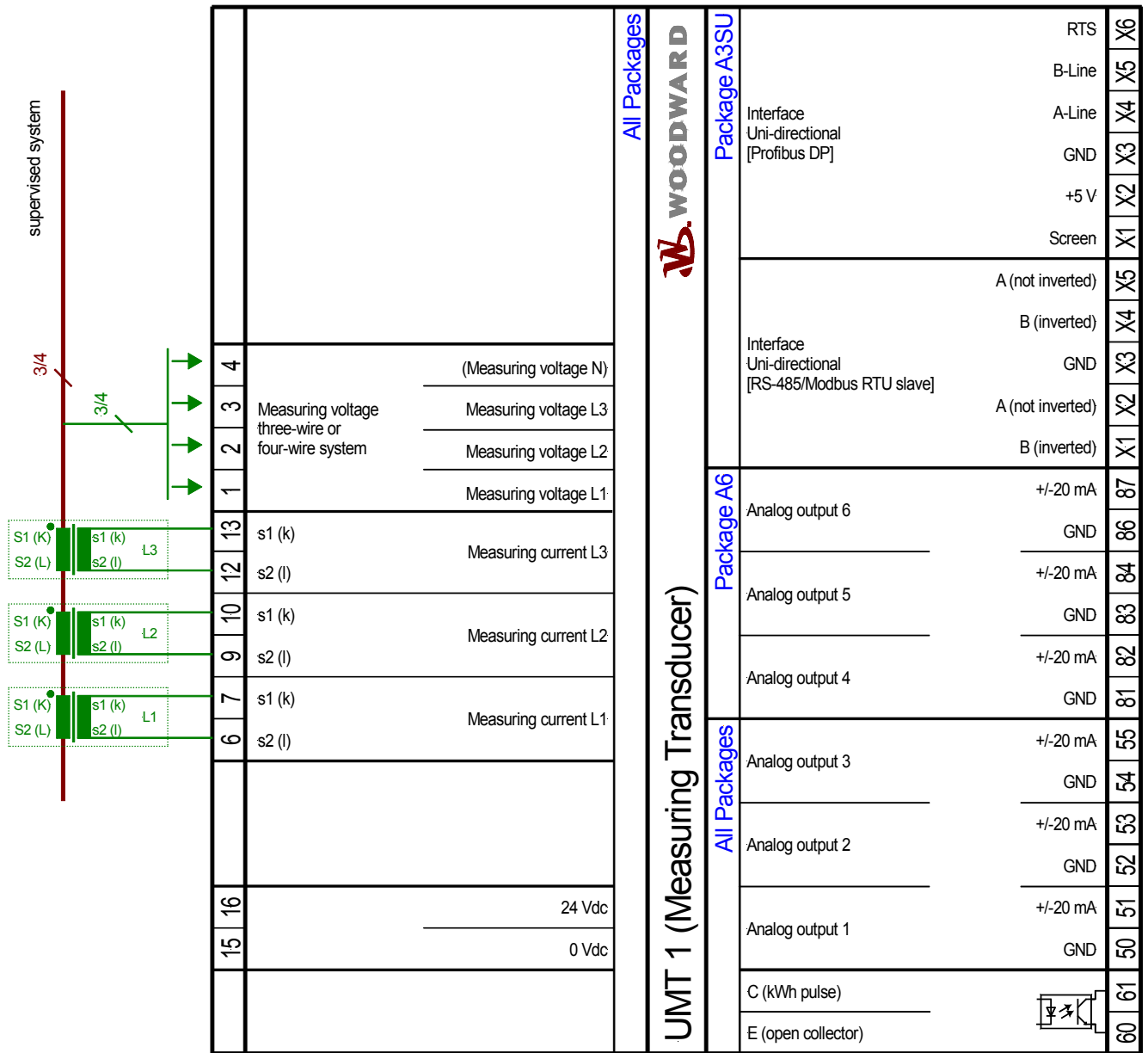
Accuracy	Class 0.5	
Power supply	24 Vdc (18 to 30 Vdc)	
Intrinsic consumption	max. 10 W	
Ambient temperature (operation)	-20 to 70 °C	
Ambient humidity	95 %, non-condensing	
Voltage	Rated value $\sqrt{\Delta}$:	[1] 66/115 Vac or [4] 230/400 Vac
	Maximum value (V_{max}):	[1] 150 Vac or [4] 300 Vac
	Rated voltage $V_{ph-ground}$:	[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 M Ω , [4] 0.7 M Ω	
Max. power consumption per path	0.15 W	
Current (I_{rated})	[1] ..1 A, [5] ..15 A	
Linear measuring range	$1.5 \times I_{rated}$	
Max. power consumption per path	< 0.15 VA	
Rated short-time current (1 s)	[1] $50 \times I_{rated}$, [5] $10 \times I_{rated}$	
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 Ω
Housing	Type APRANORM DIN 43 700
Dimensions	96x72x130 mm
Front cutout	91[+1.0]x67[+0.7] mm
Connection	screw/plug terminals depending on connector 1.5 mm ² or 2.5 mm ²
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



WIRING DIAGRAM



Subject to technical modifications.

2006-03-13 | UMT 1 Wiring Diagram u1ww-1106-ap.skf

PART NUMBERS

UMT 1 Series Measuring Transducer Packages	UMT 1/A3	UMT 1/A3SU RS-485 Modbus RTU Slave	UMT 1/A3SU Profibus DP	UMT 1/A6
100 V, ../1A	LR 20411	8444-1022	8444-1027	LR 21296
100 V, ../5A	5448-909	8444-1002	-	8444-1019
400 V, ../1A	-	8444-1043	-	LR 21159
400 V, ../5A	LR 20949	8444-1009	-	8444-1057

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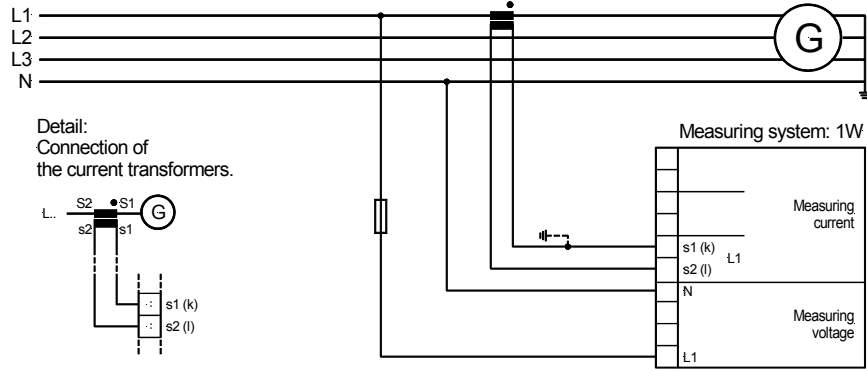
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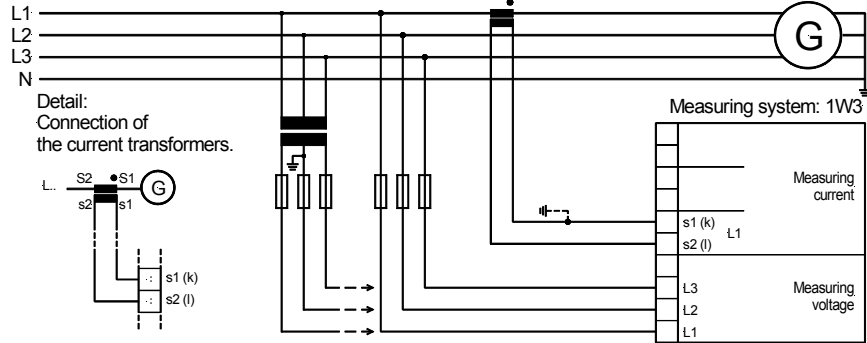
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TYPICAL APPLICATIONS (configurable)

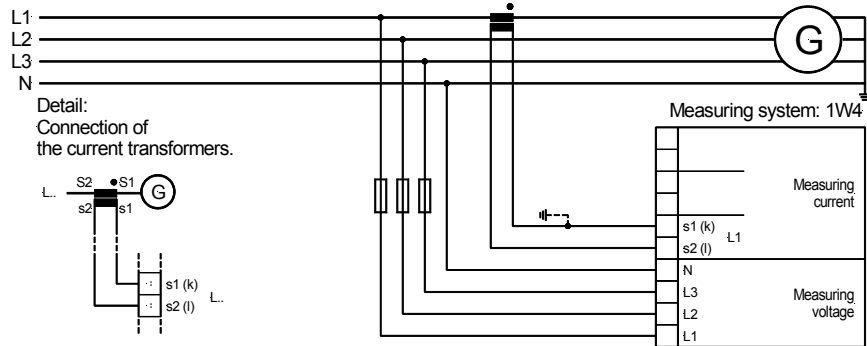
Measuring system 1W3



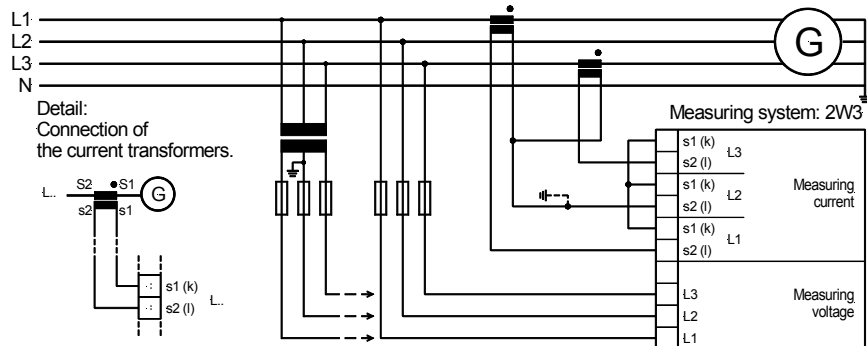
Measuring system 1W4



Measuring system 2W3



Measuring system 2W4



Measuring system 1W3

