

Technical / Commercial data	METRALINE DM62	METRAHIT AM XTRA	METRAHIT PM XTRA	METRAHIT IM XTRA BT	METRAHIT IM E-DRIVE BT	METRAport 40S	METRAHIT ISO	METRAHIT ENERGY
Picture								
Manufacturer Item number	M197A	M240A	M250A	M273S	M274S	M234D	M246B	M249A
Beving art. number	0308276	0303290	0305213	0308366	0310520	0304450	0304063	0305263
Target industry	Training / Craft	Industry / Service	Industry / Service	Industry / Service / Defence	Service / Automotive	Automotive	Craft / Industry / Service	Industry / Service
Display								
Display	digital	analog/digital	analog/digital	graphic	graphic	analog/digital	analog/digital	digital
Display Digits	6600	12000	60000	30000	30000	30000	30000	60000
Multiple display	x	–	–	x	x	–	–	x
Measuring range selection	manual/automatic	manual/automatic	manual/automatic	manual/automatic	manual/automatic	manual/automatic	manual/automatic	manual/automatic
Basic data								
Measurement type	TRMS	TRMS	TRMS	TRMS	TRMS	TRMS	TRMS	TRMS
True RMS measurement (TRMS)	x	x	x	x	x	x	x	x
Basic accuracy	0.4 %	0.05 %	0.05 %	0.15 %	0.15 %	0.2 %	0.15 %	0.02 %
Measuring circuit category	CAT IV	CAT IV	CAT IV	CAT IV	CAT IV	CAT II	CAT III	CAT IV
Max. Voltage Measuring circuit category	300Volt	600Volt	600Volt	600Volt	600Volt	300Volt	600Volt	300Volt
Relative value measurement	x	x	x	x	x	–	x	x
Minimum value memory	x	x	x	x	x	x	x	x
Maximum value memory	x	x	x	x	x	x	x	x
Peak value memory	x	–	–	–	–	–	–	x
Instantaneous value memory (data hold)	x	x	x	x	x	x	x	x
Special functions								
Explosion-tested version	–	–	–	–	–	–	–	–
Power and energy measurement	–	–	–	–	–	–	–	x
Harmonic analysis/power quality	–	–	–	–	–	–	–	x
Crest factor measurement	–	–	–	–	–	–	–	x
Speed measurement	–	–	–	x	x	x	–	–
Duty cycle measurements	x	x	x	x	x	x	–	x
Pulse frequency measurement MHz @ 5V TTL	–	x	x	–	–	x	–	x
Inductance measurement	–	–	–	–	–	–	–	–
Winding short circuit high voltage test	–	–	–	x	x	–	–	–
Circuit breaker	–	–	–	–	–	x	–	–
Voltage measurement								
Voltage measurement types	DC	DC	DC	AC	AC	DC	DC	DC
	AC	AC	AC	AC Fil	AC Fil	AC	AC	AC
		AC Fil	AC Fil	AC+DC	AC+DC		AC Fil	AC Fil
		AC+DC	AC+DC	DC	DC		AC+DC	AC+DC
				AC+DC Fil	AC+DC Fil			
With level measurement (dB)	–	–	x	–	–	–	–	x
Voltage measuring range DC	0.0001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 600Volt	0,00001Volt - 1000Volt	0,000001Volt - 600Volt
Voltage measuring ranges DC	600 mV	100 mV	600 mV	1000 V	1000 V	30mV	300 mV	60mV
	6V	1 V	6V	300 mV	300 mV	300 mV	3 V	600 mV
	60V	10 V	60V	3 V	3 V	3 V	30 V	6V
	600V	100 V	600V	30 V	30 V	30 V	300 V	60V
	1000 V	1000 V	1000 V	300 V	300 V	300 V	1000 V	600V
						600V		
Max. Voltage measuring range DC	1000Volt	1000Volt	1000Volt	1000Volt	1000Volt	600Volt	1000Volt	600Volt

Lowest resolution DC voltage	0,1 mV	0,01 mV	0,01 mV	0,01 mV	0,01 mV	0,01 mV	0,01 mV	0,001 mV
Internal resistance V DC	11	10	9	9	9	10	9	17
	10					11		
	100							
Voltage measuring range AC	0.0001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001.00001Volt - 1000Volt	0,00001.00001Volt - 1000Volt	0,00001Volt - 600Volt	0.0001Volt - 1000Volt	0,00001Volt - 600Volt
Voltage measuring ranges AC	600 mV	100 mV	600 mV	1000 V	1000 V	30mV	300 mV	600 mV
	6V	1 V	6V	300 mV	300 mV	300 mV	3 V	6V
	60V	10 V	60V	3 V	3 V	3 V	30 V	60V
	600 V	100 V	600 V	30 V	30 V	30 V	300 V	600 V
	1000 V	1000 V	1000 V	300 V	300 V	300 V	1000 V	
						600 V		
Max. Voltage measuring range AC	1000Volt	1000Volt	1000Volt	1000Volt	1000Volt	600Volt	1000Volt	600Volt
Lowest resolution AC voltage	0,1 mV	0,01 mV	0,01 mV	0,01 mV	0,01 mV	0,01 mV	0,1 mV	0,01 mV
Frequency range V AC	20 Hz - 2000 Hz	15 Hz - 20000 Hz	15 Hz - 100000 Hz	15 Hz - 100000 Hz	15 Hz - 100000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 100000 Hz
Internal resistance V AC	10	9	9	9	9	10	9	9
	11	1	1			11		
	100							
Low-pass filter AC voltage (fc)		1 kHz	1 kHz	1 kHz	1 kHz		1 kHz	1 kHz
Voltage measuring range AC+DC		0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt	0,00001Volt - 1000Volt		0.0001Volt - 1000Volt	0,00001Volt - 600Volt
Voltage measuring ranges AC+DC		100 mV	600 mV	1000 V	1000 V		300 mV	600 mV
		1 V	6V	300 mV	300 mV		3 V	6V
		10 V	60V	3 V	3 V		30 V	60V
		100 V	600 V	30 V	30 V		300 V	600 V
		1000 V	1000 V	300 V	300 V		1000 V	
Max. Voltage measuring range AC+DC		1000Volt	1000Volt	1000Volt	1000Volt		1000Volt	600Volt
Lowest resolution V AC+DC		0.01Millivolt	0.01Millivolt	0,00001Millivolt	0,00001Millivolt		0.1Millivolt	0.01Millivolt
Internal resistance V AC+DC		9	9	2,1	2,1		9	9
							1	
Frequency range V AC+DC		20 kHz	100 kHz	100 kHz	100 kHz		10 kHz	100 kHz
Level measurement Voltage types			AC					AC
Measuring range voltage level for U ref = 0.775V			-48Decibel - 63Decibel					-48Decibel - 58Decibel
Lowest resolution voltage level			0.01Decibel					0.01Decibel
Current measurement								
Current measurement types	DC	DC	DC	DC	DC	DC	AC	DC
	AC	AC	AC	AC	AC	AC	AC+DC	AC
	0,00001 Amp. - 10 Amp.	AC+DC	AC+DC	AC+DC	AC+DC		DC	AC+DC
Current measuring range DC	60 mA	0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 1 Amp.	0,00000001 Amp. - 1 Amp.	0,00000001 Amp. - 10 Amp.	0,0000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.
Current measuring ranges DC	600 mA	0,1 mA	600µA	1 A	1 A	0,3 mA	0,3 mA	600µA
	10 A	1 mA	6mA	3 mA	3 mA	3 mA	3 mA	6mA
		10 mA	60 mA	30 mA	30 mA	30 mA	30 mA	60 mA
		100 mA	600 mA	300 mA	300 mA	300 mA	300 mA	600 mA
		1 A	6 A	300µA	300µA	3 A	3 A	6 A
		10 A	10 A			10 A	10 A	10 A
Max. DC current measuring range	10 Amp.	10 Amp.	10 Amp.	1 Amp.	1 Amp.	10 Amp.	10 Amp.	10 Amp.
Lowest resolution DC current	10 µA	0,01 µA	0,01 µA	0,01 µA	0,01 µA	0,01 µA	0,1 µA	0,01 µA
Current measuring range AC	0,00001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 1 Amp.	0,00000001 Amp. - 1 Amp.	0,00000001 Amp. - 10 Amp.	0,0000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.
Current measuring ranges AC	60 mA	0,1 mA	600µA	1 A	1 A	0,3 mA	0,3 mA	600µA
	600 mA	1 mA	6mA	3 mA	3 mA	3 mA	3 mA	6mA
	10 A	10 mA	60 mA	30 mA	30 mA	30 mA	30 mA	60 mA
		100 mA	600 mA	300 mA	300 mA	300 mA	300 mA	600 mA
		1 A	6 A	300µA	300µA	3 A	3 A	6 A
		10 A	10 A			10 A	10 A	10 A
Max. AC current measuring range	10 Amp.	10 Amp.	10 Amp.	1 Amp.	1 Amp.	10 Amp.	10 Amp.	10 Amp.

Lowest resolution AC current	10 µA	0,01 µA	0,01 µA	0,01 µA	0,01 µA	0,01 µA	0,1 µA	0,01 µA
Frequency range AC	50 Hz - 2000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz	15 Hz - 10000 Hz
Current measuring range AC+DC		0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.	0,00000001 Amp. - 1 Amp.	0,00000001 Amp. - 1 Amp.		0,0000001 Amp. - 10 Amp.	0,00000001 Amp. - 10 Amp.
Current measuring ranges AC+DC		0,1 mA	600µA	1 A	1 A		0,3 mA	600µA
		1 mA	6mA	3 mA	3 mA		3 mA	6mA
		10 mA	60 mA	30 mA	30 mA		30 mA	60 mA
		100 mA	600 mA	300 mA	300 mA		300 mA	600 mA
		1 A	6A	300µA	300µA		3 A	6A
		10 A	10 A				10 A	10 A
Max. Current measuring range AC+DC		10 Amp.	10 Amp.	1 Amp.	1 Amp.		10 Amp.	10 Amp.
Lowest resolution A AC+DC		0,00001 mA	0,00001 mA	0,00001 mA	0,00001 mA		0.0001 mA	0,00001 mA
Frequency range A AC+DC		10 kHz	10 kHz	10 kHz	10 kHz		10 kHz	10 kHz
Current sensor with clipping	–	x	x	–	–	x	x	x
Current measuring range with current sensors	–	0.00001 Amp. - 10000 Amp.	0,00001 Amp. - 6000 Amp.	0,00001 Amp. - 3000 Amp.	0,00001 Amp. - 3000 Amp.	0,00001 Amp. - 30000 Amp.	0.0001 Amp. - 30000 Amp.	0,00001 Amp. - 60000 Amp.
Current transformer with clipping		x	x	–	–	–	x	x
Current measuring range with current transformers		0.00001 Amp. - 10000 Amp.	0,000001 Amp. - 6000 Amp.				0,00001 Amp. - 3000 Amp.	0,000001 Amp. - 6000 Amp.
Clip factors		1:1	1:1	1:1	1:1	1:1	1:1	1:1
		1:10	1:10	1:10	1:10	1:10	1:10	1:10
		1:100	1:100	1:100	1:100	1:100	1:100	1:100
		1:1000	1:1000	1:1000	1:1000	1:1000	1:1000	1:1000
Resistance measurement								
Milliohm measurement with 4-wire technology	–	–	–	x	x	–	–	–
Continuity test/diode test	x	x	x	x	x	x	x	x
Continuity test	x	x	x	x	x	x	x	x
Conductivity measurement	–	–	–	–	–	–	–	x
Resistance measuring range	0.1Ohm - 66000000Ohm	0.01Ohm - 40000000Ohm	0.01Ohm - 60000000Ohm	0,000001Ohm - 30000000Ohm	0,000001Ohm - 30000000Ohm	0.01Ohm - 30000000Ohm	0.01Ohm - 30000000Ohm	0.01Ohm - 60000Ohm
Resistance measuring ranges	600	100	600	3k	3k	30	300	600
	6 k	1k	6 k	30k	30k	300	3k	6 k
	60k	10k	60k	300k	300k	3k	30k	60k
	600k	100k	600k	3M	3M	30k	300k	600k
	6M	1M	6M	30m	30m	300k	3M	6M
	60m	10M	60m	3M	3M	3M	30m	60m
		40M		30m	30m	30m		
				300m	300m			
				3	3			
				30	30			
				300	300			
Max. Resistance measuring range	66MOhm	40MOhm	60MOhm	30MOhm	30MOhm	30MOhm	30MOhm	60MOhm
Lowest resolution resistance	0,1 Ohm	0,01 Ohm	0,01 Ohm	0,1 Ohm	0,1 Ohm	0,01 Ohm	0,01 Ohm	0,01 Ohm
lowest resolution milliohm measurement		10Milli-Ohm	10Milli-Ohm	0.001Milli-Ohm	0.001Milli-Ohm	10Milli-Ohm	10Milli-Ohm	10Milli-Ohm
Insulation resistance measurement								
Insulation resistance measuring range				0.0001MOhm - 3000MOhm	0.0001MOhm - 3000MOhm		0.005MOhm - 3100MOhm	
Nominal test voltage 10 V	–	–	–	–	–	–	–	–
Nominal test voltage 50 V	–	–	–	x	x	–	x	–
Nominal test voltage 100 V	–	–	–	x	x	–	x	–
Nominal test voltage 250 V	–	–	–	x	x	–	x	–
Nominal test voltage 500 V	–	–	–	x	x	–	x	–
Nominal test voltage 1000 V	–	–	–	x	x	–	x	–
Capacitance measurement								
Capacitance measurement	x	x	x	x	x	x	x	x
Capacitance measuring range	0.000001 µF - 40000 µF	0,00001 µF - 1000 µF	0,00001 µF - 600 µF	0,00001 µF - 300 µF	0,00001 µF - 300 µF	0,00001 µF - 300 µF	0,00001 µF - 300 µF	0,00001 µF - 600 µF
Capacitance measuring ranges	600µF	10 nF	60nF	30 nF	30 nF	30 nF	30 nF	60nF
	60nF	100 nF	600nF	300nF	300nF	300nF	300nF	600nF
	600nF	1µF	6µF	3µF	3µF	3µF	3µF	6µF

	6µF	10µF	60µF	30µF	30µF	30µF	30µF	60µF
	60µF	100µF	600µF	300µF	300µF	300µF	300µF	600µF
	6,6 mF	1000µF						
	40 mF							
Max. Capacitance measuring range	40000 µF	1000 µF	600 µF	300 µF	300 µF	300 µF	300 µF	600 µF
Lowest resolution capacitance	sonstige	0,00001 µF	0,00001 µF	0,00001 µF	0,00001 µF	0,00001 µF	0,00001 µF	0,00001 µF
Cable length measurement	–	–	–	–	–	–	–	x
Frequency measurement								
Frequency measurement	x	x	x	x	x	x	x	x
Frequency measurement range	0,00001.00001 kHz - 10000 kHz	0,00001 kHz - 1000 kHz	0,00001 kHz - 1000 kHz	0,00001 kHz - 300 kHz	0,00001 kHz - 300 kHz	0,00001 kHz - 1000 kHz	0.0001 kHz - 300 kHz	0,00001 kHz - 1000 kHz
Max. Frequency measuring range	10000 kHz	1000 kHz	1000 kHz	300 kHz	300 kHz	1000 kHz	300 kHz	1000 kHz
Lowest resolution Frequency	0,01 Hz	0,01 Hz	0,01 Hz	0,01 Hz	0,01 Hz	0,01 Hz	0,1 Hz	0,01 Hz
Temperature measurement								
Temperature measurement	x	x	x	x	x	x	x	x
Temperature measurement TC	x	x	x	x	x	x	x	x
Temperature measuring range TC	-50 °C - 1300 °C	-250 °C - 1372 °C	-250 °C - 1372 °C	-250 °C - 1372 °C	-250 °C - 1372 °C	-250 °C - 1372 °C	-250 °C - 1372 °C	-250 °C - 1372 °C
Temperature measurement RTD	–	x	x	x	x	x	x	x
Temperature measuring range RTD		-200 °C - 850 °C	-200 °C - 850 °C	-200 °C - 850 °C	-200 °C - 850 °C	-200 °C - 850 °C	-200 °C - 850 °C	-200 °C - 850 °C
Max. Temperature measuring range	1300 °C	1372 °C	1372 °C	1372 °C	1372 °C	1372 °C	1372 °C	1372 °C
Lowest resolution Temperature	1 °C	0,1 °C	0,1 °C	0,1 °C	0,1 °C	0,1 °C	0,1 °C	0,1 °C
Interface and memory								
Interface	–	x	x	x	x	x	x	x
Bluetooth interface	–	–	–	x	x	–	–	–
IR interface	–	x	x	–	–	–	x	x
Measured value memory	–	x	x	x	x	–	x	x
Memory capacity measured values		15400	61000	300000	300000		15400	300000
Miscellaneous								
Power supply socket	–	x	x	x	x	–	x	x
Automatic Blocking Sockets (ABS)	x	x	x	x	x	x	x	x
DakkS calibration certificate included	-	x	x	x	x	x	x	x