Data sheet
IDM 507
Process Multimeter

Feature:

- 50000 count extra large digital display
- Auto Backlit, Dual display
- Auto AC, DC and AC+DC on Voltage & Current mode with Frequency indication
- Auto selection on Ohm, Diode or Continuity
- On-Screen-Menu Selection
- Navigator Key Drive
- High Frequency Rejection(HFR)
- Auto Hold
- 0.05% DCV accuracy
- 20 mA DC current source / loop calibrator / simulator
- Manual Step (100%, 25%, Coarse, Fine) plus Auto Step and Auto Ramp
- HART mode setting with Loop Power
- Optical RS232/Optional USB interface with Software included
- Included with Magnetic Hanging kit
- CAT IV 600V/CAT III 1000V standard

Specifications:

- Accuracy is ± (% reading + number of digits)
- Ambient temperature: 23°C ± 5°C (< 80% RH)
- For the best measurements, with REL Δ function to compensate for offsets.

Voltage:

Function	Range	Accuracy
AC[1]	50.000mV 500.00mV	Sine Wave: ± (0.7% + 20d) for 40Hz to 70Hz ± (1.5% + 40d) for 71Hz to 10kHz
	5.0000V 50.000V 500.00V 1000.0V[2]	Sine Wave: ± (0.5% + 20d) for 40Hz to 70Hz ± (1.5% + 40d) for 71Hz to 1000Hz ± (3.0% + 80d) for 1001Hz to 10kHz
DC	50.000mV	± (0.05% + 30d)
	500.00mV 5.0000V 50.000V 500.00V 1000.0V	± (0.05% + 5d)
[1] Below 5% of AC range, add 20d to accuracy. [2] The bandwidth of range is 40Hz to 1kHz.		

Input Protection: 1000VDC or 1000VAC rms

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Input Impedance: 10MΩ, < 100pF
Bandwidth: 40Hz to 10kHz
Minimum Resolution: 1μV in the 50mV range
CMRR / NMRR (Common / Normal Mode Rejection Ratio):
VAC: CMRR > 60dB at DC, 50Hz / 60Hz
VDC: CMRR > 100dB at DC, 50Hz / 60Hz
NMRR > 50dB at DC, 50Hz / 60Hz
AC Conversion Type:
AC conversions are ac-coupled, true rms responding, calibrat-ed to the sine wave input.
For non-sine wave add the following Crest Factor corrections:
For Crest Factor of 1.4 to 2.0, add 1.0% to AC accuracy.
For Crest Factor of 2.0 to 2.5, add 2.5% to AC accuracy.
For Crest Factor of 2.5 to 3.0, add 4.0% to AC accuracy.
AC+DC Accuracy: AC accuracy + DC accuracy + 1.0%
HFR Accuracy: AC accuracy + 1.0% for 40Hz to 400Hz
The Cut-Off Frequency of HFR: 800Hz (-3dB point)
Attenuation Characteristic of HFR: Approx -24dB

Current:

Function	Range	Accuracy
AC[1]	50.000mA 1.000A	Sine Wave: ± (1.0% + 20d) for 40Hz to 70Hz ± (2.0% + 40d) for 71Hz to 10kHz
DC	50.000mA 1.000A	± (0.05% + 5d)
[1] Below 5% of AC range, add 20d to accuracy.		

Input Protection: Equipped with High Energy Fuse.
440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)
Input Impedance:
0.1Ω at A input, 13Ω at mA input. Not contain protection circuit.
Bandwidth: 40Hz to 10kHz
Minimum Resolution: 1μA in the 50mA range
Maximum Measuring Time:
1 minutes at A input, 10 minutes at mA input.
Rest time is 20 minutes minimum.
AC Additional Specifications:
The AC additional specifications are same as voltage.

Frequency Counter

Range	Resolution	Accuracy
500.00Hz	0.01Hz	± 3d
5.0000kHz	0.1Hz	
50.000kHz	1Hz	
100.00kHz	10Hz	

Input Protection: 1000VDC or 1000VAC rms
Minimum Frequency: 5Hz

Frequency Counter Sensitivity

Function	Range	Sensitivity (Peak-to-Peak)	
		5 to 10k (Hz)	10k to 100k (Hz)
mV	50.000mV 500.00mV	10mV	100mV
V	5.0000V	1V	1V
	50.000V 500.00V 1000.0V	1V	Unspecified
A	50.000mA	10mA	
	1.000A	300mA	

Resistance

Range	Resolution	Output Current	Accuracy
500.00Ω	0.01Ω	1mA	± (0.2% + 30d)
5.0000kΩ	0.1Ω	100uA	± (0.2% + 10d)
50.000kΩ	1Ω	10uA	
500.00kΩ	10Ω	1uA	± (0.5% + 10d)
5.0000MΩ	100Ω	100nA	± (1.0% + 10d)
50.00MΩ[1]	10kΩ	10nA	± (2.0% + 10d)
[1] There is a little rolling less than < 20d.			

Input Protection: 1000VDC or 1000VAC rms
Maximum Open Circuit Voltage: Approx 3.5V

Continuity Check

Range	Resolution	Output Current	Accuracy
500.00Ω	0.01Ω	1mA	± (0.1% + 30d)

Input Protection: 1000VDC or 1000VAC rms
Maximum Open Circuit Voltage: Approx 3.5V
Continuity Threshold: < 30Ω
Continuity Indicator: 2kHz Tone Buzzer

Diode Test

Range	Resolution	Output Current	Accuracy
2.000V	1mV	±1mA	± (1.0% + 10d)

Input Protection: 1000VDC or 1000VAC rms
Maximum Open Circuit Voltage: Approx ±3V

DC Voltage Output

Function	Range	Accuracy
Source Mode	32.0V	± 5.0%
Loop Power	32.0V	± 5.0%

Input Protection: Equipped with High Energy Fuse.
440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)

Power Source: Internal batteries, > 4.5V
Output Short Protection

DC Current Output

Range	Resolution	Accuracy
0.000mA to 20.000mA Over range to 24.000mA	1uA	± (0.05% + 5d)
4.000mA to 20.000mA Over range to 24.000mA		

Input Protection: Equipped with High Energy Fuse.
440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)
Power Source:
Source Mode: Internal batteries, > 4.5V
Simulate Mode: External loop supply, 6V to 48V
Output Short Protection

Auto DC Current Output

Mode	Type	Action (0% → 100% → 0%)
⩓	Linear	1 cycle per 40 sec
⩚	Linear	1 cycle per 20 sec
⌐	25% Step	1 step per 15 sec
⌐	25% Step	1 step per 5 sec

Input Protection: Equipped with High Energy Fuse.
440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)
Power Source:
Source Mode: Internal batteries, > 4.5V
Simulate Mode: External loop supply, 6V to 48V
Output Short Protection

Loop Power

Function	Range	Driver	Accuracy
Normal	50.000mA	30V / 1.25kΩ	± (0.05% + 5d)
250Ω Hart	50.000mA	24V / 1kΩ	

Input Protection: Equipped with High Energy Fuse.
440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)
Power Source: Internal batteries, > 4.5V
Minimum Output Voltage: 24V
Output Short Protection

General:

Sampling Rate:	10 times/sec
Overload Indication:	“OL” or “-OL”
Low Battery Indication:	
Auto Power Off:	Approx. 20 minutes after last operation
Operating Temperature:	-10 °C ~ 30 °C (≦85% RH) 30 °C ~ 40 °C (≦75% RH) 40 °C ~ 50 °C (≦45%RH)
Storage Temperature:	-20°C to 60°C, 0% RH to 80% RH (batteries not fitted)
Temperature Coefficient:	0.1 x (Specified accuracy) / °C, < 18°C, > 28°C .
Safety:	IEC 61010-1: CAT IV 600V, CAT III 1000V.
Power Requirement:	4 x 1.5V IEC LR6 or AA size
Battery Life: (Alkaline)	100 hours
Size:	95mm(W) x 207mm(L) x 52mm(D)
Weight:	Approx. 630g (with battery)
Accessories:	Battery (installed), Test Leads, User Manual, Software CD, Magnetic Hanging kit