



MM-400B

Desktop Resistance Weld Checker

MM-400B enables operators to monitor and manage key welding variables that result in changes in weld heat such as current, voltage, time, force and displacement. The compact unit supports a wide range of resistance welding technologies including AC, DC inverter, AC inverter, transistor and capacitive discharge. It features a simple and intuitive user interface and color touch panel display.

COMMON APPLICATIONS:

Process Development

- Correlate waveform and numeric data with process results
- Provides detailed weld data for process optimization and validation

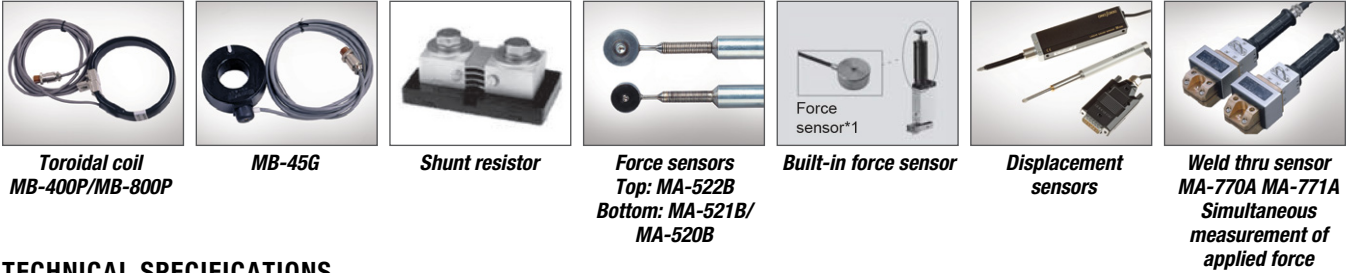
Production Environment

- Reduces scrap
 - Detects drifts in the weld process and alerts operators before process failure
- Reduces frequency of destructive testing
 - Welds that pass the set parameter limits indicate the process is in control
- Independent monitoring of welding power supply
 - Detects drifts in welding power supply calibration.

KEY FEATURES

- Envelope function allows the operator to set upper and lower segmented or continuous limits around the entire waveform
- Seam welding mode – monitor AC current and voltage or DC voltage for up to 5 minutes
- ISO 17657– compliant measurement for current (requires ISO-compliant toroidal coil)
- Ethernet (TCP/IP), and RS-232/485 communication
- Pre-weld displacement measures workpiece thickness prior to welding and supplies OK/ NG output
- Multi-language support: English, Spanish, Japanese, Chinese, Korean, German, and French

ACCESSORIES



TECHNICAL SPECIFICATIONS

MODEL(S)		3-400-03 (Basic kit) 3-400-04 (Force and displacement kit)		3-400-10 (Extended measurement model kit)		
Current	Range	1x sensitivity toroidal coil 0.100~2.000 kA / 0.30~6.00 kA / 1.00~20.00 kA / 3.0~60.0 kA / 10.0~200.0 kA (MB-400P / 800P)		Current sensor: 1.00~20.00 kA		
		10x sensitivity toroidal coil 0.01~0.2 kA / 0.03~0.6 kA / 0.1~2.0 kA / 0.3~6.0 kA / 1.0~20.0 kA (MB-45G)				
		Shunt resistor 0.025 kA~0.5 kA / 0.05~1.0 kA				
	Measurement	PEAK/RMS*2 / Arithmetic mean RMS. Accuracy ±1% Full scale		RMS Accuracy AC: ± (1%rdg+9dgt) kA AC/DC inverter: ± (1%rdg+15dgt) kA		
Voltage	Range	0.30~6.00 V/1.0~20.0 V				
	Measurement	PEAK/RMS*2 / Arithmetic mean RMS. Accuracy ±1% Full scale		PEAK / Arithmetic mean RMS +/- (1%rdg+3dgt) V		
Displacement*1	Range	When the SENSOR STEP setting is 1 μm: ±30.000 mm. Accuracy ±30.000 mm range: ±15 μm (sensor with 1 μm or less resolution)				
		When the SENSOR STEP setting is 10 μm: ±300.00 mm. Accuracy ±300.00 mm range: ±150 μm (sensor with 10 μm or less resolution)				
	Measurement	Before welding / After welding / Constant				
Force*1	Range	4.90~98.06 N (MA-520) / 49.0~980.6 N (MA-521) / 245~4903 N (MA-770) ±3% Full scale 490-9806 N (MA-522B/MA-771A)				
	Measurement	Mean RMS / maximum (peak) Before welding / After welding / Constant. Accuracy ±3% Full scale				
	Input voltage / current range	-10 to +10 V / 4 to 20 mA				
External	Range	5% to 100% of rated setting				
	Measurement	Mean RMS/maximum (peak) Before welding / After welding / Constant. Accuracy ±3% Full scale				
Measurement time	Current Voltage Displacement Power Resistance	AC	ms-AC	1 to 5000 ms	ms-AC	1 to 10000 ms
			CYC-AC	0.5 to 250.0 CYC (50 Hz) 0.5 to 300.0 CYC (60 Hz)	CYC-AC	0.5 to 500.0 CYC (50 Hz) 0.5 - 600.0 CYC (60 Hz)
			CYC***Hz-AC	0.5 to 200.0 CYC (M050 : 50Hz) 0.5 to 300.0CYC (M063 : 63 Hz) 0.5 to 2000.0 CYC (M500 : 500 Hz)	CYC***Hz-AC	0.5 to 500.0 CYC (M050:50 Hz) 0.5 - 600.0 CYC (M063:63 Hz)
	LONG CYC-AC	0.5 to 500.0 CYC (50 Hz) 0.5 to 600.0 CYC (60 Hz)		0.5 to 3000.0 CYC (M500:500 Hz)		
	DC	CYC-DC	0.5 to 100.0 CYC (50 Hz) 0.5 to 120.0 CYC (60 Hz)	CYC-DC	0.5 to 500.0 CYC (50 Hz), 0.5 to 600.0 CYC (60 Hz)	
ms-DC		1 to 2000 ms	ms-DC	1 to 10000 ms		
	SHORT ms-DC	0.50 to 100.00 ms (0.05 ms increment)				
	Force external	1 to 10000 ms				
Conduction angle		0 to 180 degrees. Accuracy ±9 degrees				
Units		V / N / kgf / lbf / °F / Mpa / bar / psi				
Input power		Single-phase 100 to 240 VAC ±10% (50/60 Hz) or 24 VDC ±10%				
External data output		RS-232C/RS-485/Ethernet				
Languages		Japanese, English, Chinese, Korean, German, French, Spanish				
No. of schedules		127				
Power usage		41 W (49 W with printer running)				

^{*1} Force and displacement model only ^{*2} ISO17657 compliant ^{*3} MA-770A/771A cannot be used with 3-400-10

WEIGHT & DIMENSIONS

Dimensions (W x D x H)	6.8 in x 11.3 in x 10.5 in (172 mm x 288 mm x 266 mm (excluding protrusions))
Weight	Approx. 11 lb (5 kg)



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