

## ■ Weld Checker/PULSE TIG Weld Checker

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MM-370C



MM-122A

## MM-370C MM-122A WM- A728

"Visually" control for better weld quality.

### Features

#### [ MM-370C ]

Possible to measure current, voltage, welding time, weld force, and displacement value.

- USB memory device connectable  
Measured data and waveform data can be saved in a USB memory device.
- Bidirectional communication  
Connected MM-370C with a PC, data can be both write and read.
- Polarity selectable  
Displacement value can be read in both + (plus) indication and – (minus) indication.



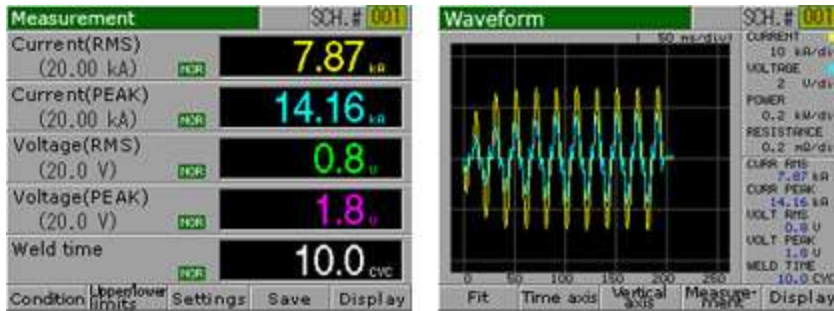
- Supports various types of welders.

Supports single-phase AC welders, DC inverter welders, AC inverter welders, and transistor type welders.

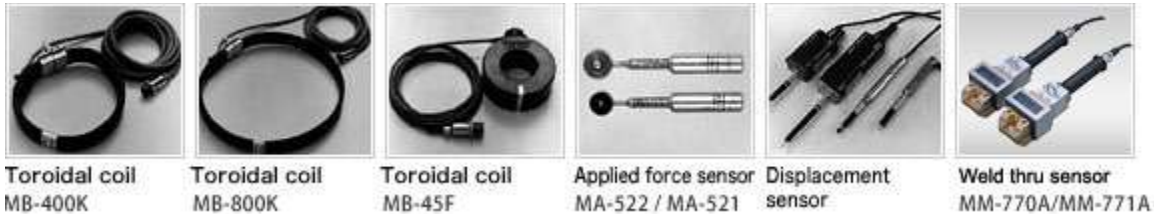
- Simple operation with a dial  
Turn the dial to scroll the screen, move the cursor, and select items. Press the dial to select the item where the cursor is located.
- Clear display of the current and voltage  
320x240 dots/5.7-inch color LCD screen.
- Various display capability  
Displays various welding waveforms without using an oscilloscope.
- Waveform re-display feature (FIT feature)  
The displayed waveform can be shifted and zoomed in and out in the screen. Even if the waveform of where you would like to observe went off the screen, it can be back to display the waveform again. (Pat. Pend)
- Supports multiple languages  
You can select the language from Japanese, English, Chinese, Korean, German, French, and Spanish.
- Recording and transferring of data
  - The measured values and waveforms can be saved in a memory or transferred out to PC for analysis.
  - Data transfer can be done in the RS-232C to PC.
  - Data can be printed out by the local printer equipped with the device.
- Options
  - The applied force and weld current can be measured simultaneously while welding (Optional weld thru sensor, MA-770A or MA-771A is necessary).
  - Voltage signal (Max.±10V) from other sensor can also be measured due to the external input facility.



- Display screen



- Accessories



[ MM-122A ]

**Highly functional and highly precise weld monitor (checker) for various weld current waveforms.**

- Cyclical and accurate display of the welding time for AC inverter welding.
- Light and compact body. Fast measuring speed, and easy installation.
- Simple "turn" and "press" operations with a single button.
- The measuring unit from "ms" or "Cycle" on measuring welding time can be selected.
- Communication facility is equipped on standard.

Measured values can be transferred to a PC and the evaluation criteria can be changed from the PC. RS232C and RS-485 are equipped on standard



# Specifications

[ MM-370C ]

Model		MM-370C	
Current	Measuring range	(1)0.1 - 2.000kA (2)0.3 - 6.00kA (3)1 - 20.00kA (4)3 - 60.0kA (5)10 - 200.0kA	
	Measured value	Arithmetic mean RMS or PEAK	
	Measurement accuracy	For range (1)(3)(5) $\pm (1\%rdg+9 - 20dgt)$ For range (2)(4) $\pm (1\%rdg+3 - 7dgt) *1$	
Voltage	Measuring range	2 ranges, 6.00 V or 20.00 V	
	Measured value	Arithmetic mean RMS or PEAK	
	Measurement accuracy	$\pm(1\%rdg+3dgt)$	
Welding time	Measuring range	AC mode	DC mode
		50Hz:0.5 - 500.0CYC/ 60Hz:0.5 - 600.0CYC	1 - 2000ms
Force	Measuring range	4.90 - 98.06N(MA-520), 49.0 - 980.6N(MA-521), 490 - 9806N(MA-522)	
		245 - 4903N(MA-770A), 490 - 9806N(MA-771A)	
	Measured value	RMS or PEAK	
	Measurement accuracy	$\pm (\text{Load cells full scale error} + 2\%rdg+29dgt)$	
Displacement (option)	Measuring range	$\pm 30.000$ (When sensor with resolution of 1 $\mu$ m or finer is used)	
		$\pm 300.00$ (When sensor with resolution of 10 $\mu$ m or finer is used)	
	Measured value	Displacement at end of delay time, start measuring from welding start	
	Measurement accuracy	$\pm 0.05\%$ of full scale	

Conduction angle measurement	0 - 180 degree (CYC mode only)
Number of schedules	127 schedules
Printer	Printable items: Measurement data, waveforms, all cycles, setting condition data, screen copies, print history
Input power supply voltage	Single-phase 100 - 240VAC $\pm$ 10% 50/60Hz
Power consumption	50W
Mass	Approx. 5kg

- \*Specifications subject to change without notice.

[ MM-122A ]

Model				MM-122A				
Measurement	Current	Measuring range		0.010 - 0.199kA (Only when 10x sensitivity coil used) 0.100 - 1.999kA 1.00 - 19.99kA 10.0 - 199.9kA				
		Measured value		The peak value of the total welding or arithmetic mean RMS in the measured range can be measured.				
		Display		4-digit digital display (7-segment LED)				
		Measuring range setting	Start	AC	000-500 cycles (31 conditions)	DC	0000 - 2000ms (31 conditions)	
			End				0.50 - 25.00ms(31 condition)	
		Measurement accuracy		RMS $\pm$ (2%rdg + 4dgt) *1, PEAK $\pm$ (2%rdg + 10dgt)				
		Detection method		Toroidal coil				
	Time	Welding-cycle / Pulsewidth	Measuring range	The maximum measurement duration is 2 seconds. Single-phase AC 0.5-100 cycles (50 Hz)/0.5-120				

				cycles (60 Hz)
				AC inverter type 0.5 - 500 max. cycle (depending on welding current frequency) or 0.50 - 2000ms (until half time of IP for TH)
			Display	4-digit digital display (7-segment LED)
		Detection method		Toroidal coil
	Conduction angle	Measuring range		30 - 180° Maximum conduction angle within welding time
		Detection method		Toroidal coil
	Voltage	Measuring range		-
		Measured value		-
		Display		-
		Display		-
		Measurement accuracy		-
		Detection method		-
	Current & voltage measurement value	RMS		Cycle display: Arithmetic mean RMS for each half cycle. "msec" display: Arithmetic mean RMS per each 1msec
				Transistor type: RMS from the start to the end. Capacitor type: RMS from the start of welding to the TH.
		PEAK		Maximum PEAK during entire welding time
Pressurization	Measuring range		-	
	Detection method		-	
Monitoring	Welding current		Upper/lower limit 31 schedule setting. Setting range 0 to Maximum measurement range	
	Welding time		Upper/lower limit 31 schedule setting. Setting range 0 to	

		Maximum measurement range
Status alarm display		Each dedicated lamp for upper limit, lower limit and "in-range" will show the status.
Status alarm signal		"GOOD", "NG-H", and "NG-L" semiconductor relay
Impulse setting		0 - 9 (Sets the location for measuring pulsation welding.)
Counter		99999 max. 5 digits
Printer		Option (BL2-58PN-MYT)
		Print-out the following; the current welding time, evaluation result, schedule no., conduction angle and *ACS data counter value been measured and displayed. *All Cycle Schedule
Step up		11 - 9 steps
Communications output		RS-232C/RS-485 The current, weld-time, evaluation results counter value and schedule data measured and display can be transfer in the communication facility.
Power requirements		Single-phase 100 - 240VAC $\pm 10\%$ (50/60Hz) or 24VDC $\pm 10\%$
Mass		1.9kg
Operating ambient temperature		0 - 40°C
Power consumption		112W max.

- \*1: rdg: Read value (2% of displayed measured value) dgt: One count of digital display (3dgt ; There is an error of 3 counts in the final digit.)
- \*2: Projections not included

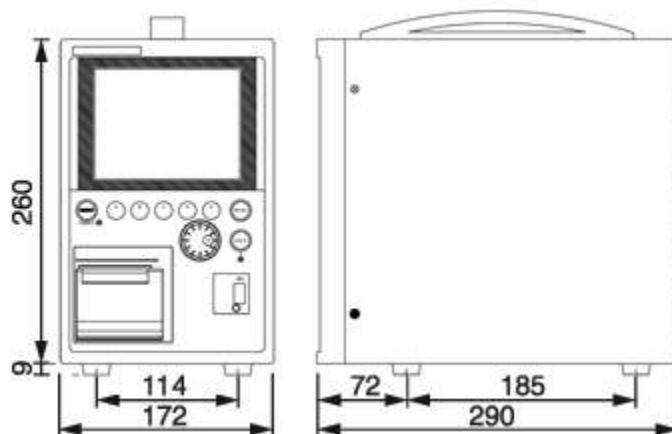
\* Specifications subject to change without notice.

[ WM-A728 ]

Model		WM-A728
Toroidal coil		TC-M101
Measuring current	Range	100A: 0.1A - 99.9A 200A: 1A - 199A 500A: 1A - 499A
	Value	RMS
Measuring time	Range	0.1ms to 4.99sec
Measuring voltage	Range	-
	Value	-
	Accuracy	-
Detecting method		Dedicated toroidal coil
Number of measuring schedule		32
Power requirements		85 to 250VAC, 50/60Hz Auto-switch, 2A max.
Memory		EEPROM memory
Ambient temperature		0 to 40°C (No condensation)

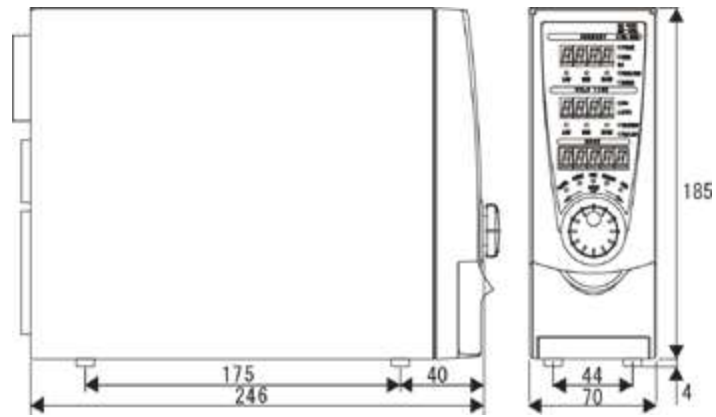
## External view

- MM-370C



- MM-122A





- WM-A728

