










Specifications

Item						
Frequency Band	2,403 MHz-2,478 MHz (A free channel is selected automatically by a frequency hopping function.)					
Communication	Interactive Communication 250 kbps					
Input(s)	1 Limit Switch 1 Test Switch					
Output(s)	1 Relay Output (Terminal Block M3) Rated Load AC/DC 30V / 0.5A		4 Relay Outputs (Terminal Block M3) Rated Load AC/DC 30V / 0.5A		1 Relay Output (Terminal Block M3) Rated Load AC/DC 30V / 0.5A	
Interface			1 RS-232C		RJ-45 Ethernet 10BASE-T or 100BASE-TX (Auto Detection)	CC-Link IE Field Basic
Display	1 LED (Red/Green)	1 Receiver LED (Green) (also as lighting switch for pairing) 1 Power LED (Red)	4 Receiver LEDs (Green) (also as lighting switch for pairing) 1 Power LED (Red)	1 Receiver LED (Green) (also as lighting switch for pairing) 1 Power LED (Red) 5 Comm. Monitor LEDs (Red)	1 Receiver LED (Green) (also as lighting switch for pairing) 1 Power LED (Red)	1 Comm. Monitor LED (Orange)
Buzzer	Piezo Buzzer 95dB (at 1 m (3.3'))					
Power Source	1 Coin Battery (CR2032)	DC 24V±20% (DC 19-28V) (Terminal Block M3)				
Current Consumption		60mA or less	80mA or less	90mA or less	140mA or less	150mA or less
Operating Environment	Temperature: 0-50°C (32-122°F) Humidity: 80% or less (without condensation)					
External Dimensions (W x H x D)	34 x 71 x 17.5 mm (1.3 x 2.8 x 0.7") (excluding protrusions)	80 x 100 x 30 mm (3.1 x 3.9 x 1.2") (excluding protrusions)	130 x 100 x 30 mm (5.1 x 3.9 x 1.2") (excluding protrusions)		150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)	
Weight	Approx. 40 g (1.4 oz)	Approx. 250 g (8.8 oz)	Approx. 430 g (15.2 oz)		Approx. 450 g (15.9 oz)	Approx. 500 g (17.6 oz)
Antenna	PCB Antenna		Dipole Antenna			
Battery Life	Approx. 300,000 uses (depending on usage conditions)					
Switches		1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Lighting Switch (for pairing)		1 Power Switch 2 Switches (6-Position DIP each) for Setting 1 Lighting Switch (for pairing)		
Keyboard						
Accessory	1 Coin Battery (CR2032)					

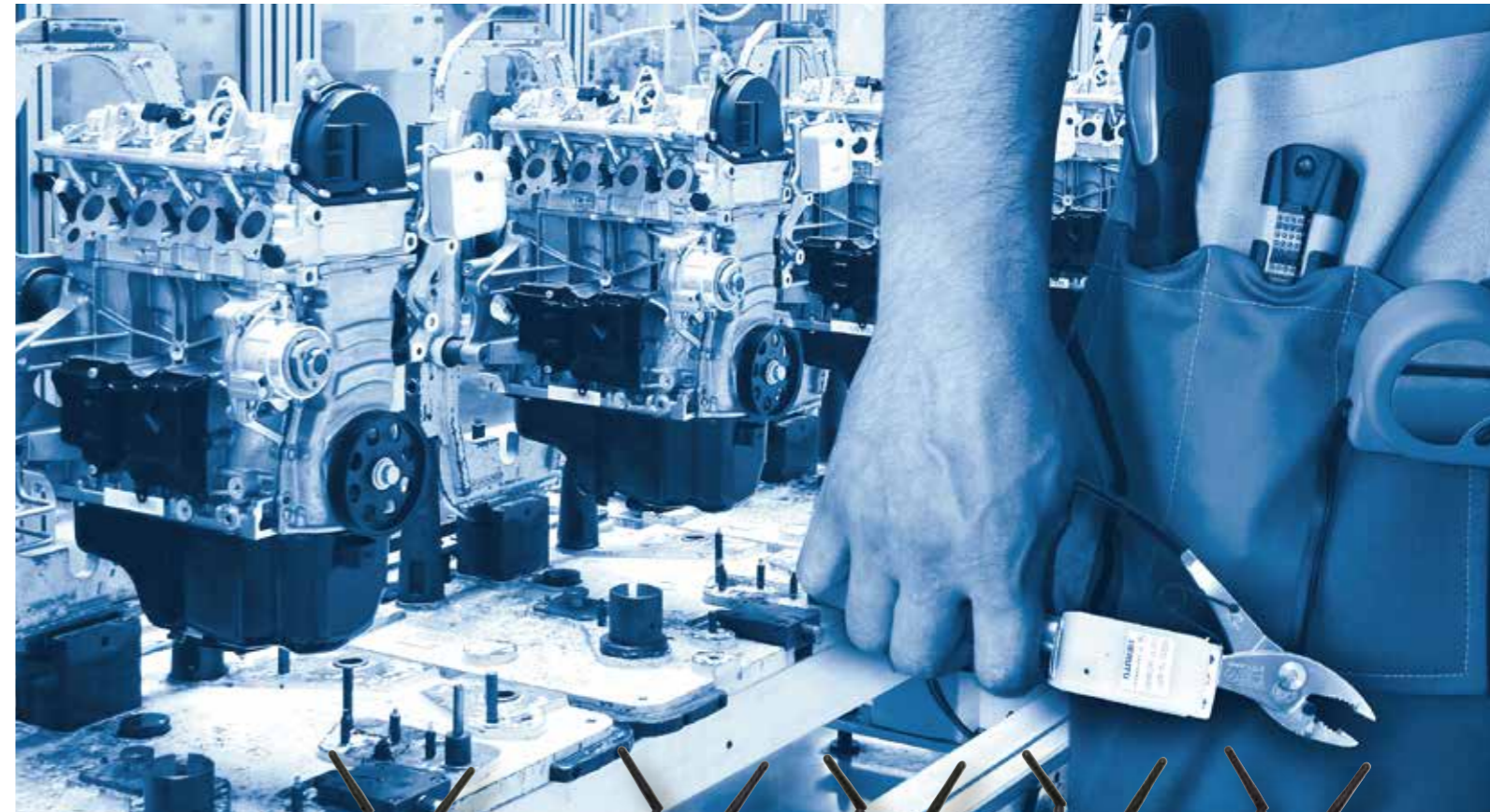
Item		
Frequency Band	2,403 MHz-2,478 MHz (A free channel is selected automatically by a frequency hopping function.)	
Communication	Interactive Communication 250 kbps	
Input(s)	6 Non-voltage Contact-inputs (1 SENSOR, 1 JUDGE, 1 RESET, 3 Work-Select)	3 Non-voltage Contact-inputs (for Work-Select) Very small single-head plug; diameter 2.5 mm (0.1")
Output(s)	(At TW-800R) 1 Relay Output (Terminal Block M3) Rated Load AC/DC 30V / 0.5A (At Counter Unit) 2 Relay Outputs (Terminal Block M3) (1 PASS / 1 FAIL) Rated Load AC/DC 30V / 0.5A	2 Power Transistor Outputs (1 PASS / 1 FAIL) Rated Load DC 24V / 0.1A
Interface		
Display	(At TW-800R) 1 Receiver LED (Green)(also as lighting switch for pairing) 1 Power LED (Red) (At Counter Unit) 7-Segment LED 2-Digit ((W x H) 15 x 27 mm (0.6 x 1.1") per digit) Graphic LCD JUDGE LED : Red/Blue/Yellow/Green	7-Segment LED 2-Digit ((W x H) 27 x 50 mm (1.1 x 2.0") per digit) JUDGE LED : Red/Blue/Yellow Receiver LED: Red/Blue/Yellow
Buzzer	Piezo Buzzer 95dB (at 1 m (3.3'))	
Power Source	DC 24V±20% (DC 19-28V) (Terminal Block M3)	AC 100-240 V (using included AC Adapter)
Current Consumption	110mA or less	120mA or less
Operating Environment	Temperature: 0-50°C (32-122°F) Humidity: 80% or less (without condensation)	
External Dimensions (W x H x D)	218 x 100 x 30 mm (8.6 x 3.9 x 1.2") (excluding protrusions)	150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)
Weight	Approx. 750 g (26.5 oz)	Approx. 250 g (8.8 oz)
Antenna	Dipole Antenna	Chip Antenna
Battery Life		
Switches	1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Lighting Switch (for pairing)	5 Touch Keys: POWER / REG. / RESET / ▲(UP) / ▼(DOWN)
Keyboard	16-Key: 0-9, ▲(UP), ▼(DOWN), ESC, ENT, F1, F2	
Accessory	1 AC Adapter	

Item	
Item	HRF-2402
Specifications	<ul style="list-style-type: none"> Frequency Band: 2,403 MHz-2,478 MHz Antenna Power: 2.1mW Number of Channels: 76ch Data Rate: 250kbps Modulation Method: GFSK Operating Power: DC 1.9-3.6 V Supply Voltage: DC 1.9-3.6 V Current Consumption: Approx. 17.0mA when transmitting Approx. 18.5mA when receiving Maximum 5.5µA at standby Operating Environment: Temperature: 0-50°C (32-122°F) Humidity: 85% or less (without condensation) External Dimensions (W x H x D): 15 x 2.1 x 22 mm (0.59 x 0.08 x 0.87") Antenna: Selection of chip or external antenna Interface: <GPIO> Input/Output: Max. 7 Ports
Note: because input / output port and serial communication with PWM / ADC share some ports, a duplicate use is impossible.	

POKAYOKE TOOLS



TW-800 Series



TW-800R



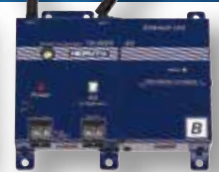
TW-800R-EXP



TW-800R-EXS



TW-800R-EXL



TW-800R-EXB



TW-800R-EXC



TW-800R-SC



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TEL: +81-53-438-3555 / FAX: +81-53-438-3411
URL: <http://www.herutu.co.jp/en/>
Email: info@herutu.co.jp

Please contact your nearest distributor.

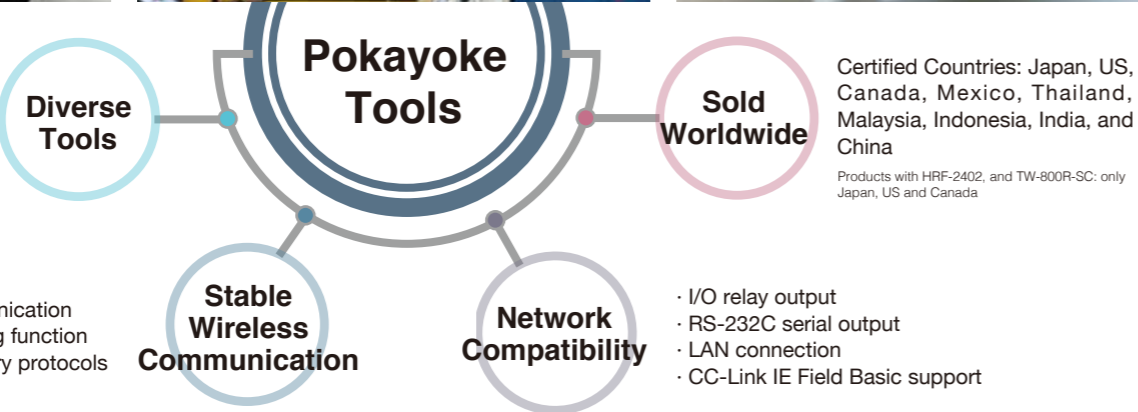


Helping Operator Mistake Prevention (Pokayoke)

Products helping operator mistake prevention (pokayoke) in the production process using tools such as torque wrench, pliers wrench, and power tools.



Applicable as tools such as torque wrenches, pliers wrenches, marking pens, power tools, riveters, grease guns, approval stamps, etc.



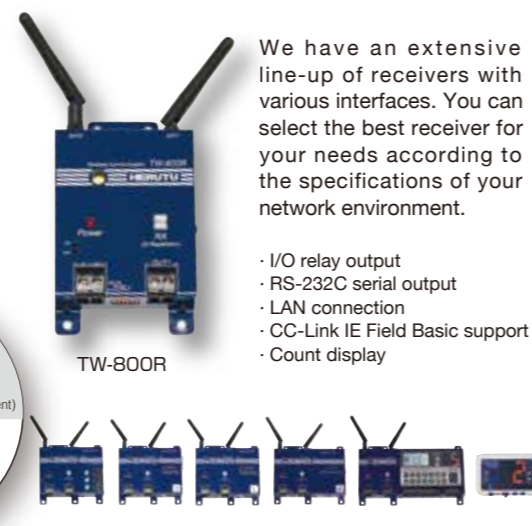
Tools (with Pokayoke transmitters)



Comm. Distance
Approx. 30 m
(98 ft) Indoors
(may vary depending on the environment)

A tool (transmitter) and a receiver that can be easily paired.

Pokayoke Receivers



Pokayoke Transmitters

TW-800T This transmitter is used by attaching to various kinds of tools such as torque wrench, plier wrench, etc.



Comm. Distance; approx. 30 m (98 ft) indoors
Certified Countries: Japan, US, Canada, Mexico, Thailand, Malaysia, Indonesia, India, and China

The power source uses an easily replaceable coin battery (CR 2032). Due to its low power consumption, approximately 300,000 uses are possible. A test switch enables communication and battery voltage checks. The case is constructed from a durable material: polypropylene.

A build-in LED displays the communication result.



Note: for a wrench measuring 50N or less, we recommend TW-510C-1.

HRF-2402 A module for tools such as Check Pen S, approval stamps, etc., with limited space to install a transmitter



Comm. Distance; approx. 30 m (98 ft) indoors
Certified Countries: Japan, US, and Canada
We plan to expand certified countries in the future.

HRF-2402 is a wireless module equipped with various interfaces. By installing an interface board equipped with the necessary input and output capabilities, the module can be attached to various tools. Our original product the Check Pen S also comes with the module embedded. This module can communicate with Pokayoke receivers TW-800R-***.



This module can be embedded into many different tools.

This module will help the "IoT conversion" of your tools.

With the cooperation of various tool manufacturers, this module will help realizing the "IoT conversion" of your tools.

Pokayoke Receivers

TW-800R-*** These receivers are capable of pairing with Pokayoke transmitters. We can provide a rich variety of receivers depending on your needs.

Enriched features include relay-output(s) and a counter, and a rich variety of connection types such as I/O, RS-232C, LAN, etc. are available.



"IoT Conversion of Tools" A Line-up of a Rich Variety of Pokayoke Tools

Pokayoke tools are being used in various industries worldwide.

Herutu Electronics Original Tools Line-up

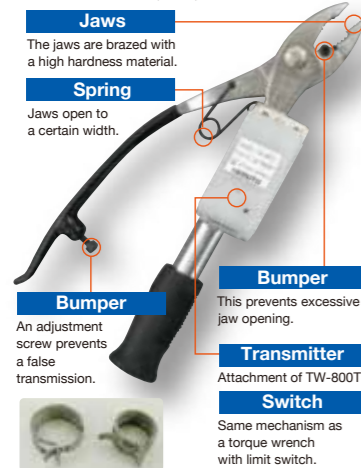
Pliers Wrench



This pliers wrench is a tool used to lock clamps by detaching or removing the pins of various hose clamps, such as those used in radiators, engines, etc. It can be used with pokayoke (mistake prevention) applications in combination with a Pokayoke receiver.

False Transmission Prevention Feature

This pliers wrench has a false transmission prevention feature that only transmits when grasping above a certain thickness. The tool is shipped with a default setting to transmit at a thickness of 1 mm (0.04") and above.



Small Type [JPS100Y]
Length 200 mm (7.9") Weight 300 g (10.6 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 20 mm (0.8")



Light Type [JPS175Y2]
Length 230 mm (9.1") Weight 350 g (12.3 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



Light & Slim Type [JPS175YS]
Length 230 mm (9.1") Weight 340 g (12.0 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



Standard Type [P200Y2]
Length 245 mm (9.6") Weight 410 g (14.5 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



Thin Nose Type [SN200Y2]
Length 250 mm (9.8") Weight 420 g (14.8 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



Bent Nose Upward Type [BN200YU2]
Length 250 mm (9.8") Weight 410 g (14.5 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



Bent Nose Downward Type [BN200YD2]
Length 250 mm (9.8") Weight 410 g (14.5 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")



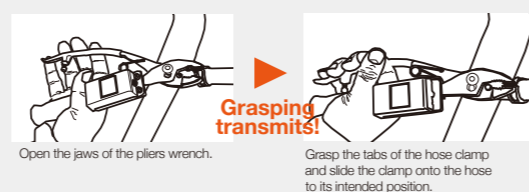
Super Wide Jaw Opening Type [LN240SR]
Length 240 mm (9.4") Weight 350 g (12.3 oz)
Jaw Opening 17-20 mm (0.7-0.8")
Max. Jaw Opening 30 mm (1.2")



Wider Jaw Opening Type [T-308R]
Length 255 mm (10.0") Weight 380 g (13.4 oz)
Jaw Opening approx. 17 mm (0.7")
Max. Jaw Opening approx. 17 mm (0.7")

Transmission Timing

Transmission starts at the moment the pliers wrench is tightened on the hose clamp. When grasping the hose clamp, a certain force is applied to the jaws of the pliers wrench. Because this is a mechanism similar to a torque wrench, the pliers wrench hits the internal limit switch in the transmitter, triggering the transmission.



Check Pen S



The Check Pen S is a check pen that helps to prevent the omission (pokayoke) of the marking work. Due to the embedded wireless module HRF-2402, the pen can communicate with a Pokayoke receiver.

Display: 1 LED (Red/Green)
Power Source: 1 Coin Battery (CR2032)
Frequency Band: 2,403 MHz-2,478 MHz
Comm. Distance: Approx. 30 m (98 ft) Indoors (The distance may vary depending on the environment)
Compliance Standards: - 2.4GHz Low Power Data Communication System
- Radio Equipment of Certification Regulation Article 2, Paragraph 1 Item 19
- Radio Equipment Regulations Article 20 of 49 Paragraph 1
Battery Life: Approx. 300,000 uses (depending on usage conditions)

Various pens can be used.



Just by changing the barrel of the Check Pen S, various pens can be used.



The replacement method is easy: just remove the current barrel, and change to the one that matches your needs.

Examples of Supported Pens



Mitsubishi Pencil Paint Marker PX-20 CP-02S

CP-02S is a check pen for preventing the omission (pokayoke) of the marking work with the PX-20 (Mitsubishi Pencil), No.500 (Teranishi Chemical Industry), and M-20PM (Pilot Corporation).

- External Dimensions*
Length approx. 135 mm (5.3")
Thickness 31 mm (1.2")
- Weight* approx. 80 g (2.8 oz)
* Pen excluded



Pentel Paint Marker MMP-20 CP-03S

CP-03S is a check pen for preventing the omission (pokayoke) of the marking work with MMP20 (Pentel).

- External Dimensions*
Length approx. 135 mm (5.3")
Thickness 31 mm (1.2")
- Weight* approx. 80 g (2.8 oz)
* Pen excluded



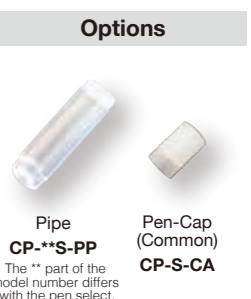
Shachihata Kawakimapan K-177N CP-11S

CP-11S is a check pen for preventing the omission (pokayoke) of the marking work with K-177N (Shachihata).

- External Dimensions*
Length approx. 125 mm (4.9")
Thickness 31 mm (1.2")
- Weight* approx. 80 g (2.8 oz)
* Pen excluded

We support various commercially available pens. (Cases of pens sold in Japan)

Model	Part Number	Pen Manufactures
CP-02S	PX-20	Mitsubishi Pencil
	No.500 M-20PM	Teranishi Chemical Industry Pilot Corporation
CP-03S	MMP-20	Pentel
CP-05S	PX-21	Mitsubishi Pencil
CP-06S	400FX	Shachihata
CP-07S	WBMK-M	Pilot Corporation
CP-08S	#600	Alton
CP-11S	K-177N	Shachihata



Pens sold in your country can be also supported. Please contact us.

Replacement Springs	For Standard Types [SP-200]	For Wide Jaw Opening Types [SP-201]	For Wider Jaw Opening Types [SP-202]
	JPS100Y JPS175Y2 JPS175YS P200Y2	SN200Y2 BN200YU2 BN200YD2	T-308R LN240SR



We make with a minimum quantity of one. Please feel free to contact us.

Pokayoke Wireless Module HRF-2402 Certified Countries: Japan, US, and Canada Capable of communications with Pokayoke receivers



Features

- It is a compact transceiver module using the 2.4GHz band.
- The communication distance is approximately 30 m (98 ft) indoors.
- Serial communication (UART / SPI) and parallel communication (PWM / ADC / IO) are provided as interfaces.
- The module has acquired certifications of Japan's Radio Law, the U.S.'s FCC, and Canada's IC. The number of certified countries will increase in the near future.
- Due to its low power consumption, the module can be driven with coin batteries, dry-cell batteries, etc.
- Either a chip antenna or external antenna can be used.
- Since proprietary protocols are incorporated, man-hours for the development related to communication can be dramatically reduced.
- We accept requests for special orders to construct the interface boards according to a customer's individual specifications. We also assemble, inspect and deliver the module and the interface board.

being used as a group of IoT tools to support mistake prevention (pokayoke) at factories in a wide range of industries. Please contact us to get support when customizing your tools.

Pokayoke Receivers (Without Counter Feature) Line-up

1-Relay-Output Type
TW-800R



I/O

1 Transmitter Support

4-Relay-Output Type
TW-800R-EXP



I/O

Maximum 4 Transmitters Support

RS232C Serial Output Type
TW-800R-EXS



Serial (RS-232C)

UNLIMITED Transmitters Support

Output Data Format

Preamble	STX	Transmitter ID No.	Task Info	ETX	Checksum
			Transmitter Battery Info		

LAN Connection Type
TW-800R-EXL



LAN

UNLIMITED Transmitters Support

Output Data Format

Preamble	STX	Transmitter ID No.	Task Info	ETX	Checksum
			Transmitter Battery Info		

CC-Link IE Field Basic Support
TW-800R-EXB



CC-Link IE Field Basic

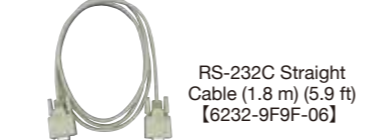
UNLIMITED Transmitters Support

CC-Link IE Field Basic

Common options for TW-800R-**




Option for TW-800R-EXS



Certified Countries: Japan, US, Canada, Mexico, Thailand, Malaysia, Indonesia, India, and China

Pokayoke Receivers (With Counter Feature) Line-up

Simple Pokayoke Counter
TW-800R-SC



1 Transmitter Support

Count Remaining
When receiving a signal from a Pokayoke transmitter, the count will be reduced by one.

Process A → **Process B** → **Process C**


Task Details of a Work (Example)

Specified Count Value	2			
Tool Timer (Task time per tool)	No timer feature			
Work Timer (Task time taken per work)	No timer feature			

When the number of tasks completed reaches a specified number, the remaining tasks are counted as "0", and a "PASS" is assigned.

PASS Buzzer Sound Relay Output

Pokayoke Counter
TW-800R-EXC



Maximum 4 Transmitters Support

Count Remaining
When receiving a signal from a Pokayoke transmitter, the count will be reduced by one.

Process A → **Process B** → **Process C**

Task Details of a Work (Example)

Specified Count Value	3	2	4	2
Tool Timer (Task time per tool)	10s	5s	15s	5s
Work Timer (Task time taken per work)	40s			

The counter assigns a "PASS" or "FAIL" depending on any or all of the specified conditions of count number, tool timer and work timer.

PASS Buzzer Sound Relay Output

FAIL Buzzer Sound Relay Output

Option for TW-800R-EXC



Options for TW-800R-SC



Configurable Specified Count Value	Up to 99 times per work
Selectable Number of Work Types	1 type However, up to eight types of work can be selected with the optional input cable for Work-Select.
Reset Method	Reset with the configured timer
Remarks	Adjustable buzzer volume

Configurable Specified Count Value (Sum of all tools)	Up to 99 times per work
Selectable Number of Work Types	Up to 8 types
Reset Method	Reset with the configured timer Reset with an external signal
Remarks	The order of using tools can be managed (sequence feature) Selectable Languages (Japanese / English)

Certified Countries: Japan, US and Canada

Certified Countries: Japan, US, Canada, Mexico, Thailand, Malaysia, Indonesia, India, and China