

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)	5 Non-voltage Contact Inputs (1 JUDGE, 1 RESET, 3 Work-Select)
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 3-Digit (W x H) 27 x 50 mm (1.1 x 2.0") per digit) JUDGE LED: Red/Blue/Green/White Receiver LED: Red/Blue/Green/Yellow/White
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	200mA 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. 290 g (10.2 oz)
Antenna	Dipole 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	

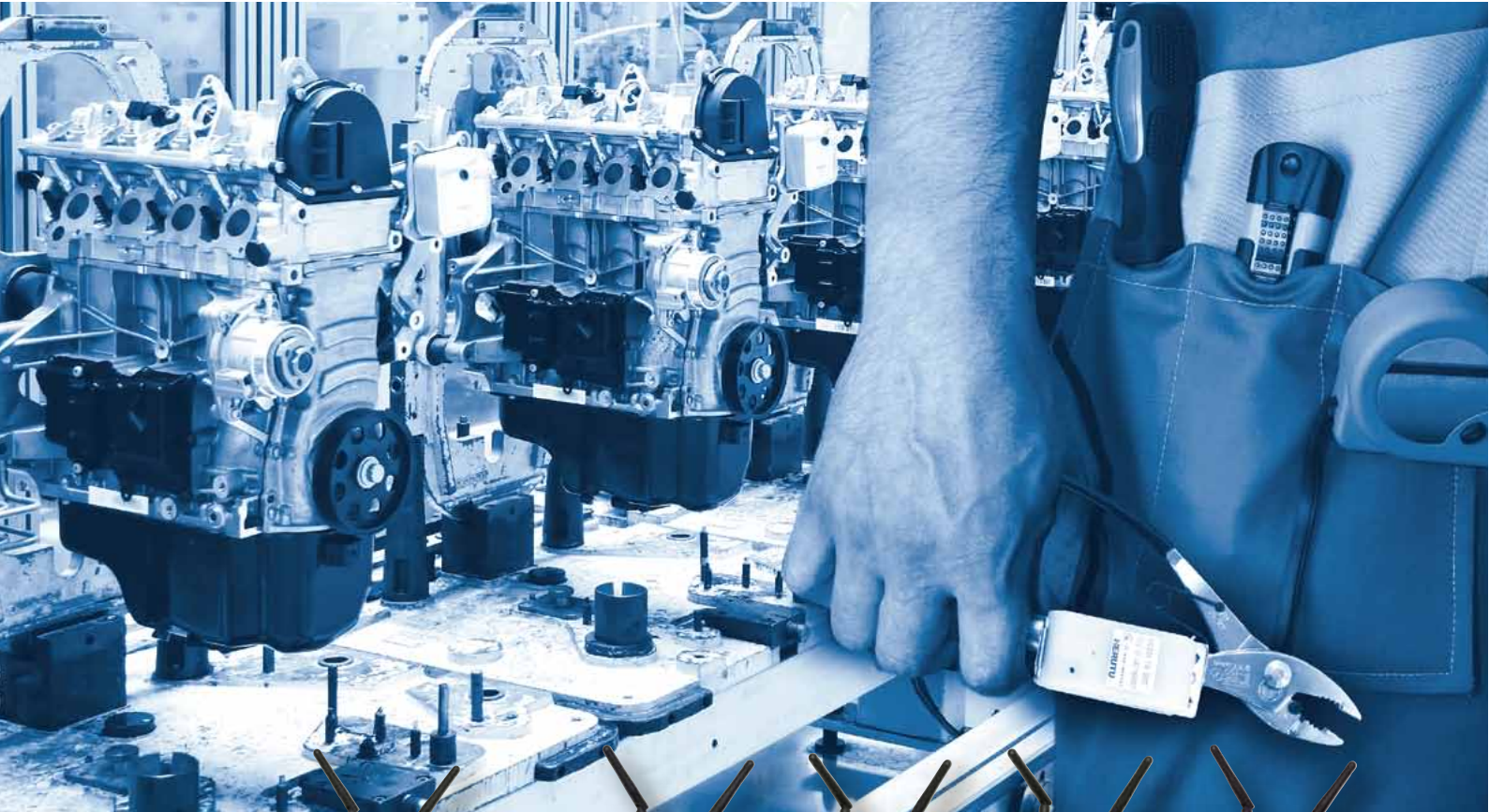
Item	
Frequency Band	2,403 MHz-2,478 MHz
Antenna Power	2.1mW
Number of Channels	76ch
Data Rate	250kbps
Modulation Method	GFSK
Operating Power	DC 1.9-3.6 V
Supply Voltage	
Current Consumption	Approx. 17.0mA when transmitting Approx. 18.5mA when receiving Maximum 5.5µA at standby
Operating Environment	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 plus	
Specification and Operating Environment	
Supported OS	Windows7 to 10 32bit & 64bit
CPU	Intel Core i3 2.30GHz or above
Memory	4GB or above
Screen Resolution	1366 □ 768 (WXGA) or above
Free space	1 GB (Excluding data / log)
Supported Languages	Japanese / English

POKAYOKE TOOLS

POKAYOKE
ボカヨケ

TW-800 Series



TW-800R



TW-800R-EXP



TW-800R-EXS



TW-800R-EXL



TW-800R-EXB



TW-800R-EXC



TW-800R-SCL

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Please contact your nearest distributor.

HERUTU

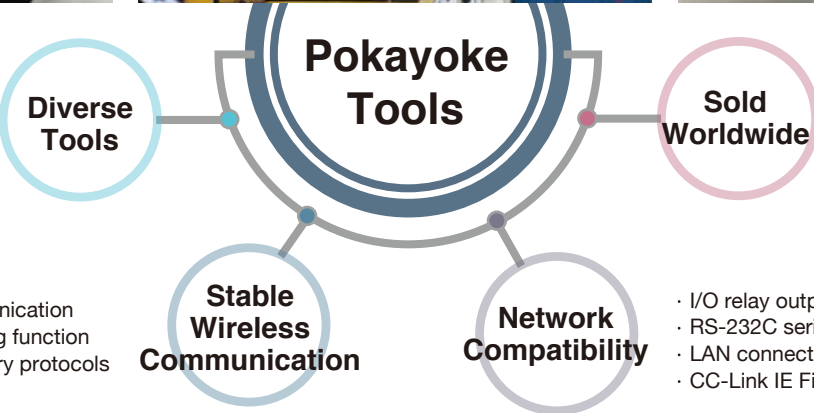


Helping Operator Mistake Prevention (Pokayoke)

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.



Available in Canada, US, Mexico, Japan, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, Indonesia and India

Note: Products with HRF-2402 are unavailable in Malaysia and Taiwan.

- Interactive communication
- Frequency hopping function
- Adopted proprietary protocols

- I/O relay output
- RS-232C serial output
- LAN connection
- CC-Link IE Field Basic support

Tools (with Pokayoke transmitters)



<Herutu Electronics Original Products>



<Supporting Products from Tool Manufacturers>

We support tools from Uryu Seisaku, Ltd., Nakamura Mfg. Co., Ltd. and Makita Corporation.

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



TW-800R

We have an extensive line-up of receivers with various interfaces. You can select the best receiver for your needs according to the specifications of your network environment.

- I/O relay output
- RS-232C serial output
- LAN connection
- CC-Link IE Field Basic support
- Count display



Pokayoke Transmitters

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



Available in Canada, US, Mexico, Japan, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, Indonesia and India

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.



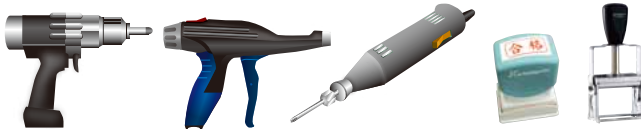
Note: for a wrench measuring 50N or less, we recommend TW-510C-1.

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



Available in Canada, US, Mexico, Japan, China, Thailand, Vietnam, Philippines, Indonesia and India

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.



Receiver (without counter feature)

Receiver (with counter feature)

Available in Canada, US, Mexico, Japan, China, Taiwan, Thailand, Vietnam, Malaysia, Philippines, Indonesia and India

Note: TW-800R-SCL is unavailable in Malaysia and Taiwan.

"IoT Conversion of Tools"

A Line-up of a Rich Variety of Pokayoke Tools

Pokayoke tools are being used in a wide variety of 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.

Jaws

The jaws are brazed with a high hardness material.

Spring

Jaws open to a certain width.

Bumper

This prevents excessive jaw opening.

Transmitter

Attachment of TW-800T.

Switch

Same mechanism as a torque wrench with limit switch.

Bumper

An adjustment screw prevents a false transmission.



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")



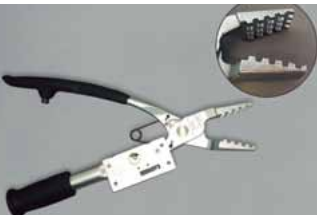
Standard Type [P200Y2]

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")
Note: Thin bent nose upward and downward types are also available.



Spring Hose Clip Type [AE-200]

Length 250 mm (9.8") Weight 500 g (17.6 oz)
Jaw Opening approx. 33 mm (1.3")
Max. Jaw Opening approx. 33 mm (1.3")



Snap Ring Type [FOS-185]

Length 205 mm (8.1") Weight 300 g (17.6 oz)
Jaw Opening approx. 6-8 mm (0.2-0.3")
Max. Jaw Opening approx. 21 mm (0.8")
Use Range of Snap Ring: 10-40 mm (0.4-1.6")
Note: There is no function for preventing a false transmission.



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")



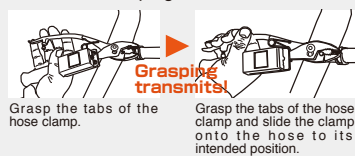
Wider Jaw Opening Type [T-308R]

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")

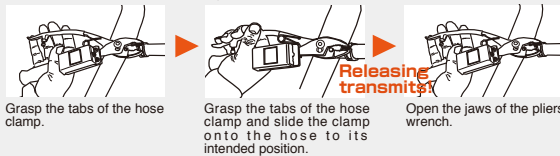
Transmission Timing

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. Two types of transmission timings are available depending on the transmitter used.

【TW-800T】Grasping transmits



【TW-800T-PLR】Releasing transmits



Replacement Springs



For Standard Types

【SP-200】
JPS100Y
JPS175Y2
JPS175YS
P200Y2



For Wide Jaw Opening Types

【SP-201】
JPS175Y2
JPS175YS
P200Y2



For Wider Jaw Opening Types

【SP-202】
T-308R
LN240SR

Custom-ordered Products (Examples)



Check Pen S



Built-in wireless module HRF-2402

The Check Pen S is a check pen for mistake prevention (pokayoke) of 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

The CP-02S is a check pen for mistake prevention (pokayoke) of marking work with the PX-20 (Mitsubishi Pencil), the No.500 (Teranishi Chemical Industry), the M-20PM (Pilot Corporation), the MMP-20 (Pentel), and the #600 (Alton).

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



Tombow Pencil Marking Holder H-DM CP-09S

The CP-09S is a check pen for mistake prevention (pokayoke) of marking work with the H-DM (Tombow Pencil).

- External Dimensions*
Length approx. 128 mm (5.0")
Thickness 31 mm (1.2")
- Weight* approx. 56 g (2.0 oz)
* Pen excluded



Shachihata Kawakimapen K-177N CP-11S

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

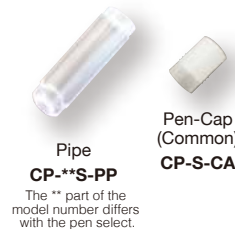
- External Dimensions*
Length approx. 125 mm (4.9")
Thickness 31 mm (1.2")
- Weight* approx. 80 g (2.8 oz)
* Pen excluded

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	Teranishi Chemical Industry
	M-20PM	Pilot Corporation
	MMP-20 #600	Pentel Alton
CP-05S	PX-21	Mitsubishi Pencil
CP-09S	H-DM	Tombow Pencil
CP-11S	K-177N	Shachihata

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

Options



Pokayoke Wireless Module HRF-2402 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.
- 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.



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

being used as a group of IoT tools to support mistake prevention (pokayoke) at factories in a wide range
e. 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	Transmitter Battery Info	ETX	Checksum
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LAN Connection Type TW-800R-EXL



LAN

UNLIMITED
Transmitters
Support

Output Data Format

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



AC Adapter
【ADB24050-C】

Option for TW-800R-EXS



RS-232C Straight
Cable (1.8 m) (5.9 ft)
【6232-9F9F-06】

Option for TW-800R-EXC



Switch Box
for Work-Select
【TW-WS-01】

Options for TW-800R-SCL



Input Cable
【TW-SCLI-6】



Judgment Output Cable
【TW-SCLO-4】



Wall Mounting Bracket
【TW-SCLF-01】



Desktop Stand
【TW-SCDS01】

POKAYOKE plus

Ensuring Traceability of Tasks Using Tools

Production Process Support Software for Pokayoke Tools

Ensuring Traceability of Tasks

'POKAYOKE plus' is a Windows-compatible application that can be used in conjunction with a Pokayoke receiver capable of a LAN connection, for customers who want to ensure the traceability of 'wearing safety protectors' or 'tasks involving tools' of workers in the factory.



Simple Pokayoke
Counter
TW-800R-SCL



LAN Connection Type
Pokayoke Receiver
TW-800R-EXL



Mistake Prevention (Pokayoke) for Covering Multiple Processes

Counter Feature on Computer (POKAYOKE plus Viewer)

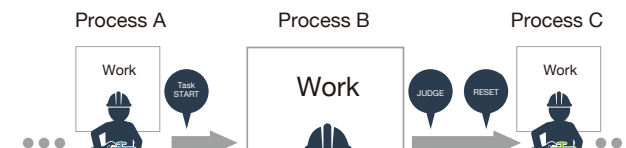
Pokayoke Receivers (With Counter Feature) Line-up

Simple Pokayoke Counter TW-800R-SCL



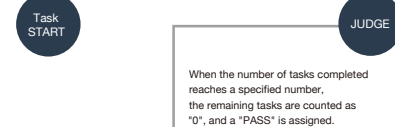
1
Transmitter
Support

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



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



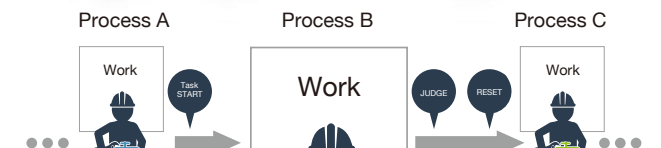
Configurable Specified Count Value	Up to 999 times per work
Selectable Number of Work Types	1 type Note: By using the optional 'input cable', you can select up to 8 types of work.
Reset Method	Reset with the configured timer Reset with an external signal
Remarks	Adjustable buzzer volume

Pokayoke Counter TW-800R-EXC



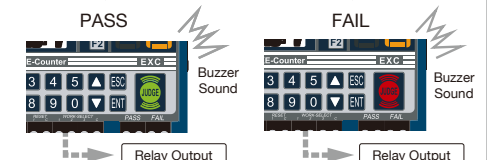
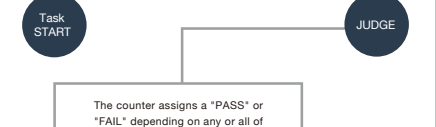
Maximum 4
Transmitters
Support

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



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			



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)