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**PRODUCT GUIDE**

SENSORS  
CONTROLLERS  
MOTION DEVICES  
PROCESS AUTOMATION  
CONNECTORS/CABLES  
CONTROL SWITCHES

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**sensorMATIC**  
SPECIALIST&SOLUTIONS

# BC Series

## Color Mark Sensors



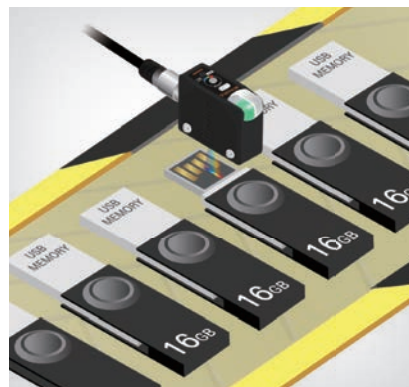
## Outstanding Color Matching Accuracy

### FEATURES

- Outstanding color matching accuracy
  - RGB light emitting diodes and 12-bit resolution
  - 2 detection modes (color only / color + intensity)
  - 3-step sensitivity adjustment for each mode (fine, normal, rough)
- External light interference reduction minimizes errors and allows stable detection
- Check reference color with teaching indicator
- Operation indicator (red LED), stability indicator (green LED), timer indicator (orange LED)
- Configure operation functions with external input from wiring
- W 1.24 x L 6.7 mm spot size for detection of tiny targets and color marks
- IP67 protection structure (IEC standard)

### APPLICATION

- BC series color mark sensors used for presence detection of product labels
- BC series color mark sensors used for error detection during manufacturing processes
- BC series color mark sensors used to check location of package stamping



# BH Series

## M18 Front/Side Mount Photoelectric Sensors



### FEATURES

- Front mounting (M18 nut) or side mounting (M3 screws)
- Simultaneous NPN/PNP open collector output
- Sensing distance:
  - Through-beam type: 20 m
  - Retroreflective type: 4 m
  - Diffuse reflective type: 1 m, 300 mm
- Compact size: W 14 mm x H 34.5 mm x L 28 mm
- Mirror Surface Rejection (MSR) function allows stable detection of highly reflective targets (retroreflective type only)
- Sensitivity adjuster included
- Light ON / Dark ON operation mode switch
- Operation indicator (red LED) and stability indicator (green LED)
- Built-in reverse polarity protection circuit and output overcurrent (short-circuit) protection circuit
- Mutual interference prevention function (except through-beam type)
- IP67 protection structure (IEC standard)

### APPLICATION

- BH series front/side mounting photoelectric sensors used for presence detection of aluminum cans during manufacturing process.



# BTF / BTS Series

Ultra-Compact, Thin Type Photoelectric Sensors with Built-In Amplifiers



## Remarkably Slim and Compact

### FEATURES

#### [BTF Series]

- Through-beam type (BTF1M): Ø2 mm
- Diffuse reflective type (BTF30): Ø0.2 mm (at distance 10 mm)
- BGS reflective type (BTF15): Ø0.2 mm (at distance 10 mm)
- ※ Detecting distance may vary by environmental factors

#### [Common Features]

- Stability indicator (green LED) and operation indicator (red LED)
- Stainless steel 304 mounting brackets
- IP67 protection structure (IEC standard)

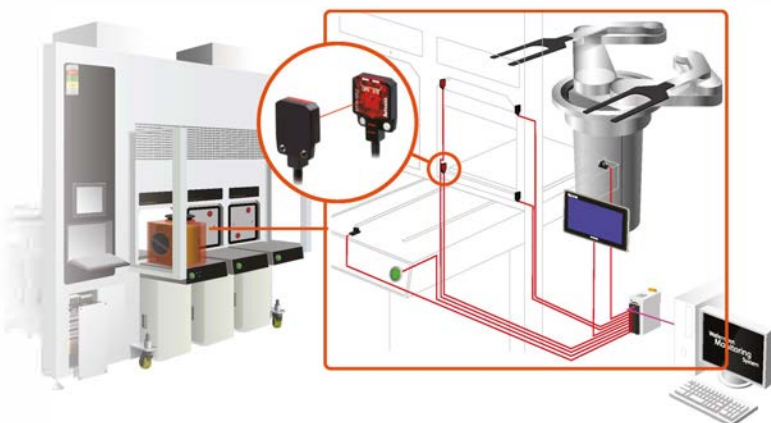
#### [BTS Series]

- Through-beam type (BTS1M): Ø2 mm
- Retroreflective type (BTS200): Ø2 mm (at distance 100 mm)
- Convergent reflective type (BTS15/30): Ø0.15 mm (at distance 10 mm)
- ※ Detecting distance may vary by environmental factors

### APPLICATION

- BTF series photoelectric sensors used for presence detection of semiconductor wafer enclosure transfer

- BTS series photoelectric sensors used for presence detection of clutches in automatic laser marking machines



# BJ Series

## Compact High Performance Photoelectric Sensors



### FEATURES

- Various detection type models available: (long distance, BGS reflective, transparent glass, micro spot)
- Compact size: W 10.6 × H 32 × L 20 mm
- Light ON/Dark ON operation mode switch
- Sensitivity adjuster
- Mutual interference prevention function



Connector Type

Cable Type

# BS5-P Series

## Push Button Type Photomicro Sensors



### FEATURES

- Button switch operation ensures accurate detection regardless of material, color, or reflectivity of target objects
- Optimized for transport detection of semiconductor wafer enclosures
- Mechanical life cycle of 5 million operations
- Four operation indicators (red LED) [side: 2, top: 2]
- Stainless steel mounting brackets



# BEN Series

## Universal AC/DC Photoelectric Sensors with Built-In Amplifiers



### FEATURES

- Universal AC/DC models (relay contact output) available
- Light ON/Dark ON operation mode switch
- Sensitivity adjuster (except through-beam types)
- Specialized, high-performance sensor IC
- Output types: relay contact (AC/DC type), NPN/PNP open collector (DC type)



# MST Series

## Retroreflective Tape

### FEATURES

- Attach in settings where mirrors can be difficult to install (i.e. curved surfaces, narrow spaces, moving targets, etc.)
- Can be easily cropped to fit environmental settings
- High retroreflectivity per surface area



MST-50-10 (50x50 mm)

MST-100-5 (100x100 mm)

MST-200-2 (200x200 mm)

# BL Series

## Compact Photoelectric Liquid Level Sensors



### FEATURES

- Photoelectric sensors for non-contact detection of liquid in transparent pipes
- Detects presence of liquid in transparent pipes (external diameter 6 to 13 mm, <1 mm thick)
- Compact size: W 23 x H 14 x L 13 mm
- Light ON/Dark ON operation mode switch
- Operation mode indicator (green LED)  
[Light ON: on, Dark ON: off]
- Operation status indicator (red LED)



※Protection bracket (sold separately)

# BR Series

## Cylindrical (Ø18 mm) Photoelectric Sensors



### FEATURES

- Long sensing distance: 20 m (through-beam type)
- Excellent noise resistance with digital signal processing
- High-speed response time under 1 ms
- Sensitivity adjuster (except through-beam type)
- IP66 protection structure (IEC standard)



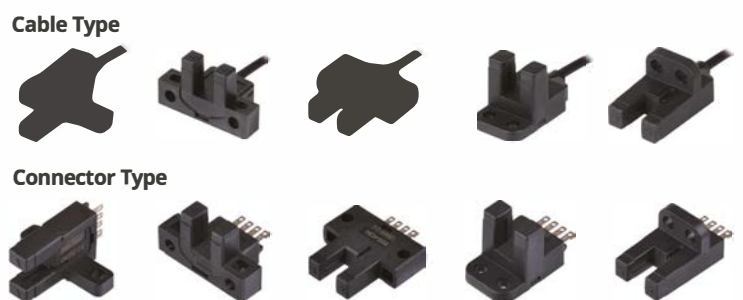
# BS5 Series

## Ultra-Compact Photomicro Sensors



### FEATURES

- Ultra-compact size with built-in amplifier (NPN or PNP open collector)
- Various shapes available for installation flexibility (K, T, L, Y, V types)
- High-speed response frequency: 2 kHz
- Switch between Light ON and Dark ON modes using control terminal/wire
- Dust resistant build with protection window (emitter/receiver)
- Wide power supply range: 5-24 VDC
- Operation indicator (red LED)



### Photoelectric Sensors



**BPS Series**  
Compact Flat Type

**BA2M Series**  
Long Distance,  
Diffuse Reflective Type

**BYD Series**  
Compact Standard Type

**BMS Series**  
Side Sensing Type

**BX Series**  
Universal  
AC/DC Type

**BUP Series**  
U-Shaped Type

# BW/BWC/BWP/BWPK Series

## Area Sensors / Picking Sensors



### FEATURES

#### BW Series

General Purpose Area Sensors



- Long sensing distance (up to 7 m)
- Economical, reliable, with diverse configurations

#### BWC Series

Cross-Beam Area Sensors



- 3-point cross-beam type area sensors
- Stable detection in bright environments (100,000 lx)

#### BWP Series

Flat Body Area Sensors (Plastic Body)



- Slim body (13 mm) with Fresnel lens
- High-speed response time (under 7 ms)

#### BWPK Series

Flat Body Picking Sensors



- Slim body (10 mm) with Fresnel lens
- Highly visible job indicators provide clear status identification

# BF5 Series

## High Speed Single/Dual Digital Display Digital Fiber Optic Amplifiers



### FEATURES

- Available in dual and single display models
- Dual digital display for displaying PV and SV (BF5□-D)
- 5 response speeds (50 μs, 150 μs, 500 μs, 4 ms, 10 ms)
- Display range: 0-4000 (standard mode), 0-9999 (long-distance mode)
- Simple sensitivity adjustment settings
- Saturation prevention function, inverted display, mutual interference prevention, auto channel setting function



Communication Converters BFC Series

# FD/FT/FL/GD/GT Series

## Fiber Optic Sensor Cables

### FEATURES

- Various cable head types (thread, cylindrical, flat, perpendicular, plastic, area detection)
- Various sensing directions (top, side, flat, L-type top, top + side)
- Various sensing modes (through-beam, diffuse reflective, convergent reflective)
- Various cable types (standard, flexible, coaxial, break-resistant, heat-resistant)
- Diverse line-up, easy installation, high performance



# PSQ Series

## Dual Display Digital Pressure Sensors



### FEATURES

- Dual display for simultaneous display of process value (PV) and setpoint value (SV)  
\*Secondary (SV) display: setpoint value, pressure unit, or display-OFF
- Switch between NPN and PNP open collector output via parameter configuration
- 3-color main (PV) display  
(RUN mode: green/red, parameter setting mode: orange)
- 12-segment LCD display capable of diverse alphanumeric characters
- Measurement range: -100.0 to 100.0 kPa / -100 to 1000 kPa  
(Pneumatic type: compound pressure, Fluid type: sealed gauge pressure)
- Display resolution: 0.1 kPa / 1 kPa (by model)



Pneumatic Type



Fluid Type

### APPLICATION

- PSQ series pressure sensors used for air-leak test of PET bottles
- PSQ series pressure sensors used for suction confirmation of semiconductor components
- PSQ series pressure sensors used to confirm reference pressure of pipes.



# PSAN Series

## Compact Digital Pressure Sensors



### FEATURES

- Pressure measurement of any gas, liquid or oil
- High display resolution:
  - negative, compound pressure 0.1 kPa
  - standard pressure 0.1 kPa, 1 kPa
- Auto shift function, hold function
- Independent 2-point output (N.O. / N.C. output selectable)
- Zero-point adjustment function, peak value monitoring function, chattering prevention function



Fluid Type  
(Cable Type)



Fluid Type  
(Connector Type)



Pneumatic Type  
(Connector Type)

### APPLICATION

- PSAN series pressure sensors used to measure the pressure of water sprays in a potato washing conveyor belt





# PRF(A) Series

## Full-Metal Cylindrical Inductive Proximity Sensors



PRF Series

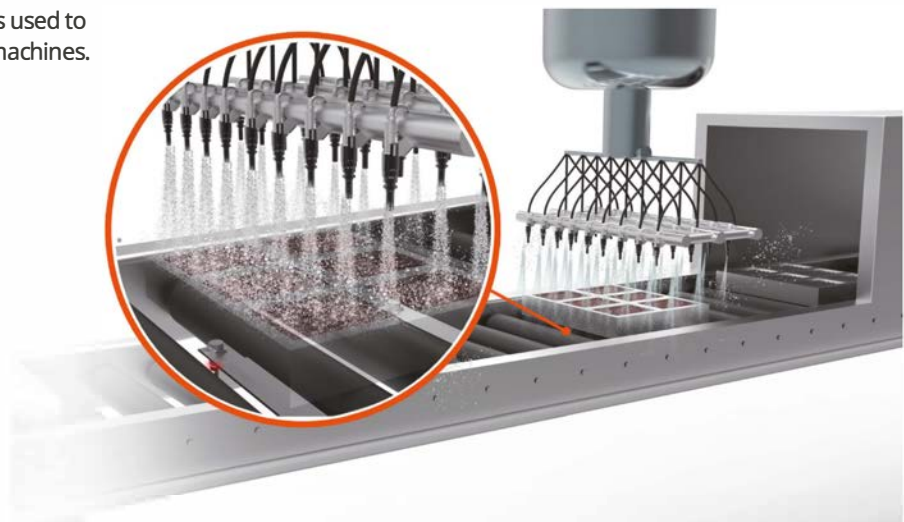
PRFA Series

### FEATURES

- High resistance to impact and wear caused by contact with workpieces or wire brushes (sensor head/housing: stainless steel)
- Reduced risk of malfunction caused by aluminum chips
- PTFE coating prevents malfunctions caused by welding spatter (spatter-resistant models)
- Excellent noise immunity with specialized sensor IC
- Built-in surge protection circuit and overcurrent protection circuit
- 360° ring type operation indicator (red LED)
- Oil resistant cable
- IP67 protection structure (IEC standard)

### APPLICATION

- PRF series full-metal inductive sensors used to detect tray locations on food cleaning machines.



# PR Series

## Standard Cylindrical Inductive Proximity Sensors



### FEATURES

- Excellent noise resistance with specialized sensor IC
- Built-in surge protection circuit, reverse polarity protection circuit (DC 3-wire types), and overcurrent protection circuits (DC types)
- Operation indicator (red LED)
- Durable and reliable alternative to micro switches and limit switches
- IP67 protection structure (IEC standard)



PR(T) Series  
Cable Type



PRCM(T) Series  
Connector Type



PRW(T) Series  
Cable Connector Type

# PRD Series

## Cylindrical Inductive Proximity Sensors With Long Sensing Distance



### FEATURES

- Long sensing distance and excellent noise resistance with specialized sensor IC
- Simple operation, reliable performance, and high durability
- Built-in surge protection circuit, reverse polarity protection circuit, and overcurrent protection circuits
- Operation indicator (red LED)
- IP67 protection structure (IEC standard)



PRD(T) Series  
Cable Type



PRDCM(T) Series  
Connector Type



PRDW(T) Series  
Cable Connector Type

# PRA Series

## Cylindrical Spatter-Resistant Inductive Proximity Sensors



### FEATURES

- Coated with teflon for high heat resistance (prevent malfunction from welding spatter)
- Excellent noise resistance with specialized sensor IC
- Built-in surge protection circuit
- Built-in overcurrent protection circuit (DC 2-wire, DC 3-wire types)
- Built-in reverse polarity protection circuit (DC 3-wire types)



PRA(T) Series  
Cable Type



PRACM(T) Series  
Connector Type



PRAW(T) Series  
Cable Connector Type

# PRDA Series

## Cylindrical Spatter-Resistant Inductive Proximity Sensors with Long Sensing Distance



### FEATURES

- Coated with teflon for high heat resistance (prevent malfunction from welding spatter)
- Long sensing distance and excellent noise immunity with specialized sensor IC
- Built-in surge protection circuit, reverse polarity protection circuit, and overcurrent protection circuits
- Durable and reliable alternative to spatter-resistant limit switches



PRDA(T) Series  
Cable Type



PRDACM(T) Series  
Connector Type



PRDAW(T) Series  
Cable Connector Type

# PS/PSN Series

## Rectangular Inductive Proximity Sensors with Various Sizes



### FEATURES

- Excellent noise resistance with specialized sensor IC
- Long life cycle, reliable performance, economical, and easy-to-install
- Built-in surge protection circuit
- Built-in reverse polarity protection circuit (DC 3-wire types)
- Built-in overcurrent protection circuit (DC types)
- Operation indicator (red LED)
- IP67 protection structure (IEC standard)



PSN17



PSN25



PS50

# PFI Series

## Flat Type Inductive Proximity Sensors



### FEATURES

- Flat design (10 mm height) allows easy installation in limited spaces
- Excellent noise resistance with specialized sensor IC (DC types)
- Built-in reverse polarity protection circuit, overcurrent protection circuit (DC types)
- Built-in surge protection circuit
- Operation indicator (red LED)
- Durable and reliable alternative to micro switches and limit switches
- IP67 protection structure (IEC standard)



# AS Series

## Rectangular Inductive Proximity Sensors with Long Sensing Distance



### FEATURES

- Long sensing distance of 50 mm
- Excellent noise immunity with specialized sensor IC
- Built-in surge protection circuit, reverse polarity protection circuit, and overcurrent protection circuits
- Power supply: 12-48 VDC (operating voltage: 10-65 VDC)
- Simultaneous output (Normally Open + Normally Closed)
- Power indicator (green LED) and operation indicator (red LED)
- IP67 protection structure (IEC standard)



# CR Series

## Cylindrical Capacitive Proximity Sensors

### FEATURES

- Detect various materials including metal, iron, stone, plastic, water, and grain
- Long life cycle and reliable performance
- Built-in surge protection circuit, reverse polarity protection circuit (DC types)
- Built-in surge protection circuit (AC types)
- Built-in sensitivity adjuster for easier configuration



CR30



CR18

# MGA50S/MGAM50S Series

Shaft-Type Ø50 mm Magnetic Absolute Rotary Encoders



 High Precision	 Long Service Life	 50 mm Diameter
 High Resolution (MGA50S Series)	 3 Output Types (BCD, Binary, Gray) (MGA50S Series)	



High precision  
under any condition

## FEATURES

### [Magnetic Encoders]

- High accuracy in harsh environments including shock, vibration, dust, and humidity (compared to optical sensors)
- Longer service life compared to optical encoders

### [MGA50S Series]

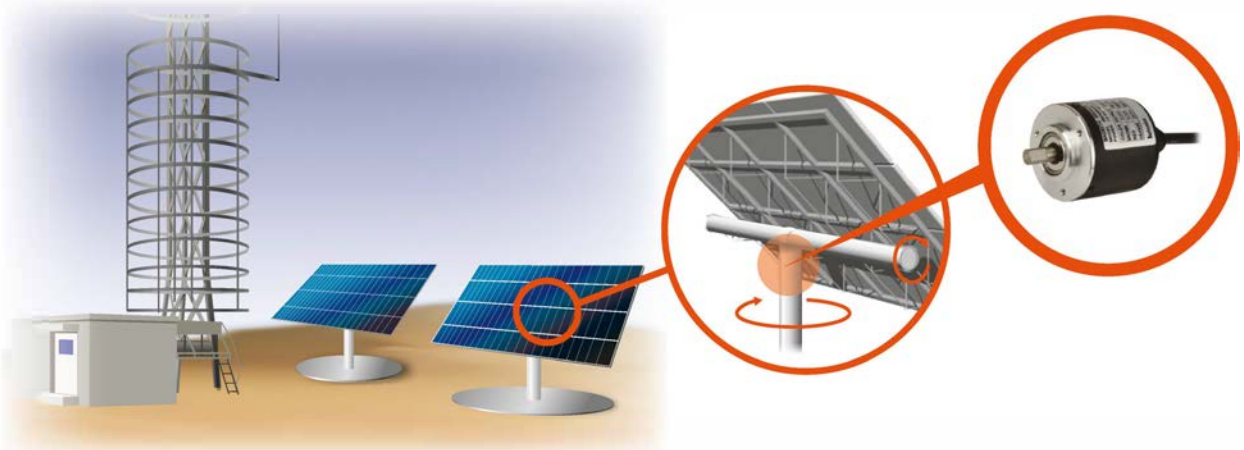
- Various output codes available: BCD, binary, Gray
- Various resolutions available:  
32, 40, 45, 48, 64, 90, 128, 180, 256, 360, 512, 720, 1024 divisions
- Power supply: 5 VDC ±5%, 12-24 VDC ±5%
- IP50 protection structure (IEC standard)

### [MGAM50S Series]

- Output code: binary
- Control output types: Parallel / SSI
- 23-bit (8388608) total resolution
  - Single-turn: 10-bit (1024 divisions)
  - Multi-turn: 13-bit (8192 revolutions)
- IP50 protection structure (IEC standard)

## APPLICATION

- MGAM50S series magnetic absolute rotary encoders used to control the rotation angle of solar panels in relation to the position of the sun.



# E15S/E18S/E20S/E30S/E40S/E50S/E58S/E68S Series

## Shaft Type Incremental Rotary Encoders

CE  US  
(CE & UL - E18S Only)  
(CE - All models except E15S, E68S)

### FEATURES

- Encoder diameter: 15 mm, 18 mm, 20 mm, 30 mm, 40 mm, 50 mm, 58 mm, 68 mm
- Low shaft moment of inertia
- Various resolutions, output codes, control outputs, and cable types available



# E20HB/E40H/E58H/E60H/E80H/E100H Series

## Hollow Shaft, Built-In Hollow Shaft Incremental Rotary Encoders

CE  
(Except E60H)

### FEATURES

- Encoder diameter: 20 mm, 40 mm, 58 mm, 60 mm, 80 mm, 100 mm
- Various hollow shaft sizes
- Various resolutions, output codes, control outputs, and cable types available



# EP50S Series

## Shaft Type Ø50 mm Absolute Rotary Encoders

CE

### FEATURES

- Compact size absolute rotary encoders with 50 mm diameter
- Various output codes available: BCD, binary, Gray
- Various resolutions, up to 1024 divisions  
: 6, 8, 10, 12, 16, 20, 24, 32, 40, 45, 48, 64, 90, 128, 180, 256, 360, 512, 720, 1024
- IP64 protection structure (IEC standard)



# EPM50 Series

## Shaft Type Ø50 mm Multi-Turn Absolute Rotary Encoders

CE

### FEATURES

- Control output types: Parallel / SSI
- 23-bit (8388608) total resolution
  - Single-turn: 10-bit (1024 divisions)
  - Multi-turn: 13-bit (8192 revolutions)
- Zero-point reset with single-turn data reset and multi-turn count reset functions
- CW/CCW direction setting function
- Overflow alarm (OVF) function



# TK Series

Standard High Accuracy PID Temperature Controllers



**50ms**  
High Speed Sampling

**HEAT  
COOL**  
Simultaneous Heating & Cooling Control

**CURRENT  
SSR**  
Output Selection

**SSRP**  
SSRP Output  
(Standard/Phase/Cycle control selectable)

**EASY**  
Parameter Configuration

**RS485**  
RS485 Communication  
(Modbus RTU)

**DAQ  
Master**  
PC Monitoring

High-speed sampling, RS485 communication, and simultaneous heating/cooling control



## FEATURES

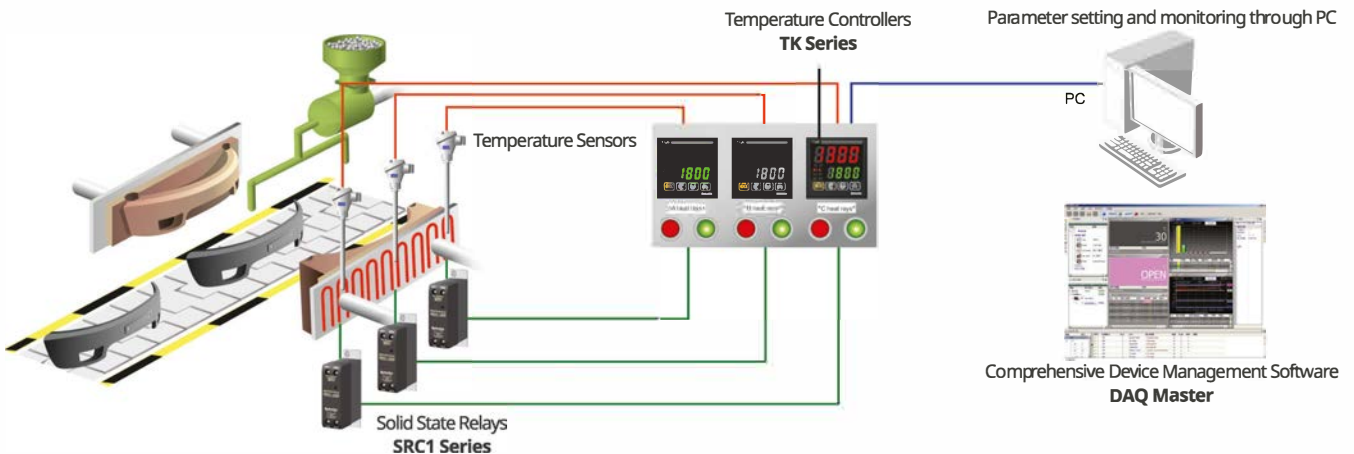
- 50 ms high-speed sampling rate and  $\pm 0.3\%$  display accuracy
- Simultaneous heating and cooling control function
- Automatic/manual control option
- Switch between current output and SSR drive output
- SSR drive output (SSRP function) control options: ON/OFF control, cycle control, phase control
- Communication output models available: RS485 (Modbus RTU)
- Parameter configuration via PC (DAQ Master)
- User-friendly parameter features
- **Low voltage (24 VAC, 24-48 VDC) models available (except TK4N models)**



**TK4N**  
(W) 48 mm x (H) 24 mm

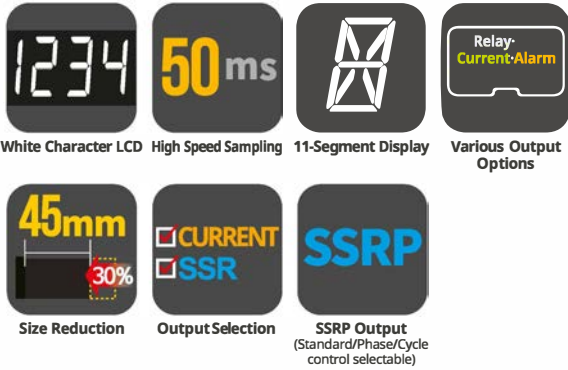
## SYSTEM CONFIGURATION

- Temperature control for automobile parts injection molding



# TX Series

## LCD Display PID Temperature Controllers



11-Segment LCD display with easy-to-read, large 15.3 mm white PV characters



### FEATURES

- Large LCD display with easy-to-read white PV characters
- 50 ms high-speed sampling rate and  $\pm 0.3\%$  display accuracy
- Switch between current output and SSR drive output
- SSR drive output (SSRP function) control options: ON/OFF control, cycle control, phase control
- Communication output model available: RS485 (Modbus RTU)
- Parameter configuration via PC (DAQ Master)
- 11-segment display for improved display of alphanumeric characters
- Compact, space-saving design with 45 mm depth

### APPLICATION

- TX series temperature controllers used for accurate temperature control of commercial coffee roasters



# TM Series

## Modular Multi-Channel PID Temperature Controllers



### FEATURES

- Multi-channel (4-channel: TM4 / 2-channel: TM2) input and output control
- High-speed sampling cycle (4-channel: 100 ms / 2-channel: 50 ms)
- Module connection and expansion with expansion connectors
  - Communication between modules
  - No additional power supply wiring
  - Expandable up to 31 units (124-channels / 62-channels)
- Simultaneous heating and cooling control function
- Isolated input channels (dielectric strength: 1000 VAC)
- Parameter configuration via PC (USB and RS485 communication)
- Easy wiring and maintenance with various connectors: sensor input connector, control output connector, power/communication connector



### APPLICATION

- TM series multi-channel temperature controllers used for independent temperature control of sealing and cutting processes in stick packaging machines with multiple channel support



# TCN/TC Series

## Economical Dual/Single-Display PID Temperature Controllers



### FEATURES

- Dual display (TCN) and single display (TC) PID temperature controllers
- 100 ms high-speed sampling rate and  $\pm 0.5\%$  display accuracy
- Switch between relay output and SSR drive output
- SSR drive output (SSRP function) control options: ON/OFF control, cycle control, phase control
- Compact design with large display panels for easier reading
- Connector plug types offer easier wiring and maintenance (TCN4S-□-P)



TCN Series



TC Series

# TA Series

## Analog Non-Indicating Type PID Temperature Controllers



### FEATURES

- Auto-tuning PID temperature control
- PID and ON/OFF control: toggle via external switch
- Deviation indicators (green, red LED)
- Control output indicator (red LED)
- Stop control output function using analog dial
- Sensor disconnect display function





# TF3 Series

## Refrigeration Temperature Controllers



### FEATURES

- Standard installation size for refrigeration panels (W 70.3 x H 28.2 mm)
- Various compressor load current capacity: 5A, 16A, 20A
- Various user-friendly functions:
  - Defrost sync function: simultaneous defrost operation of multiple controllers (up to 6 units)
  - RTC (Real Time Clock) function: night mode operation and real-time defrost control
  - Built-in alarm function
- Remote monitoring of real-time temperature and output control (using TFD series remote display unit, sold separately)
- Communication output models available: RS485 (Modbus RTU)
- Parameter configuration via PC (RS485 communication)
  - DAQMaster software included (comprehensive device management software)



Remote Display Unit  
TFD Series (sold separately)

### APPLICATION

- T3 series refrigeration temperature controllers used to control temperature of refrigerators inside food storage warehouses. TFD series display units used to check temperature and status from outside the warehouses.



# TC3YF Series

## Refrigeration Temperature Controllers



### FEATURES

- ON/OFF control
- Standard input type: thermistor (NTC)
  - RTD (Pt100Ω) input models available upon request
- Temperature range:
  - Thermistor (NTC): -40.0 to 99.9 °C (-40 to 212 °F)
  - RTD (Pt100Ω): -99.9 to 99.9 °C (-148 to 212 °F)
- Various functions: auto/manual defrost selection, compressor start-up delay, restart delay, minimum ON time, end-defrost delay, evaporator fan operation delay



## Communication Converters

# SCM-WF48

## Wireless Communication Converters



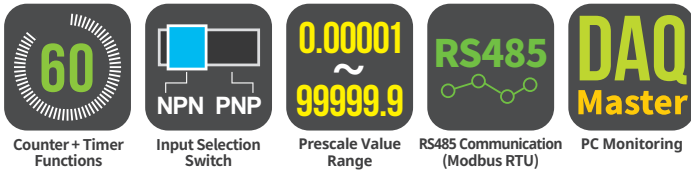
### FEATURES

- Convert RS485/USB signals to Wi-Fi signals for wireless transmission up to 100 m
- Compact size (W 45 x H 25 x L 76.3 mm, without antenna)
- Built-in surge protection circuit and reverse polarity protection circuits
- Supports Access Point (AP) mode and Station (STA) modes
- Various mounting methods (DIN rail, screw mount)



# CT Series

## Programmable Digital Counter/Timers



### FEATURES

- Integrated counter/timer unit for counting and timing requirements
- RS485 (Modbus RTU) communication (models available)
- One-shot output time: 0.01 s to 99.99 s

#### [Counter Functions]

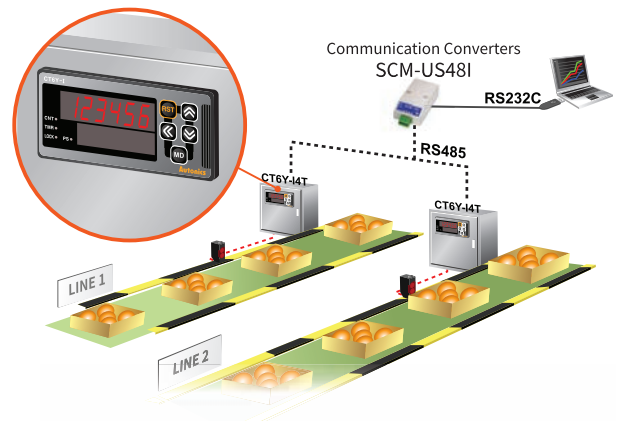
- Various input/output modes (9 input modes, 11 output modes)
- Prescale value range: 6-digit models: 0.00001 to 99999.9  
4-digit models: 0.001 to 999.9
- Batch counting function, set count starting point (value) function
- High-speed counting up to 10 kcps

#### [Timer Functions]

- Various output modes (11 output modes)
- Time setting range: 6-digit models: 0.001 s to 99999.9 h  
4-digit models: 0.001 s to 9999 h

### APPLICATION

- Remote production quantity data management using communication function



# LA8N / LE8N Series

## Compact 8-Digit LCD Backlight Counters / Timers



### FEATURES

- Compact digital counters and timers with LCD backlight
- Count-up/down counters with decimal point setting (LA8N)
- Various time specification settings (LE8N)
- Voltage, no-voltage, universal voltage input options
- Built-in lithium battery (operates without external power)
- IP66 protection structure (IEC standard)



# LE365S-41

## Compact Week/Year Digital Timers



### FEATURES

- Time configuration and control in week or year units
- Weekly day change operation, yearly holiday operation, season switching operation, auto daylight saving time function, etc.
- Independent control output (relay) built-in



# LE4S Series

## Digital LCD Backlight Timers



### FEATURES

- Compact, space-saving design with LCD backlight
- Configure set value and time range independently (using flicker or ON-OFF delay output mode)
- One-shot output time: 0.01 s to 99.99 s
- Time setting range: 0.01 s to 9999 h
- Signal ON start and Power ON start options



# ATM Series

## Miniature Analog Timers



### FEATURES

- Ultra-compact/miniature size (W 21.5 mm x H 28 mm x D 59.3 mm)
- Up to 4 simultaneous control outputs with 4PDT (250 VAC, 3 A)
- Simple and accurate timing control with analog dial
- Various timing ranges: 0.1 s to 3 h (11 available options, by model)
- Power supply: ATM4-2: 24 VDC  
ATM4-5: 220 VAC 50/60 Hz  
ATM4-6: 110 VAC 50/60 Hz



# ATS Series

## Compact, Multi-Functional Analog Timers



### FEATURES

- Simple operation analog timers with various configurations
- Various time setting range and output operation modes
- Time setting range: 0.1 s to 30 h
- Twin timer models (ATS8W/ATS11W)
- Power ON start, Signal ON start, Power OFF start options

ATS8W/ATS11W Series  
Twin Timers



# SR(H)2/3 Series

Three-Phase Solid State Relays (2-Pole/3-Pole)



Two Mounting Hole Types



Alarm Output Function



Low Voltage Input



4000 VAC Dielectric Strength (Select Models)



Removable Heatsink (Integrated Heatsink Types)



Various Mounting Methods



Detachable Heatsink Type SR2/3 Series



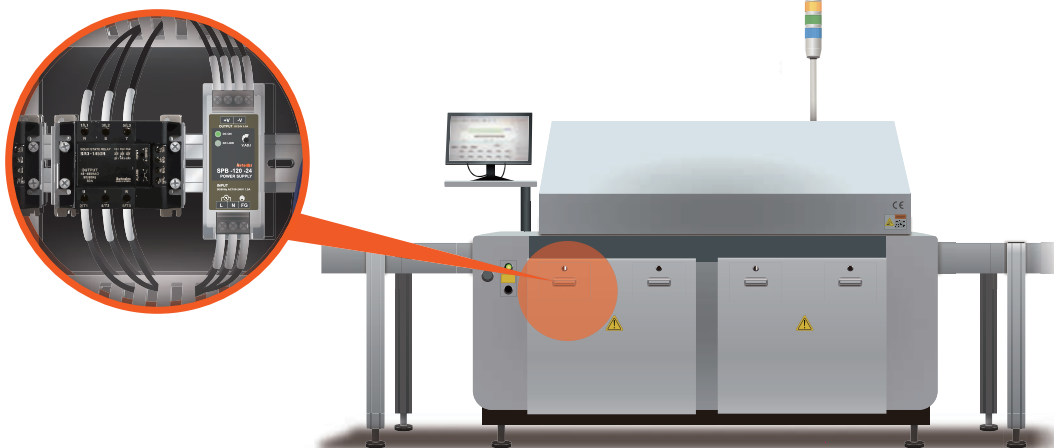
Integrated Heatsink Type SRH2/3 Series

## FEATURES

- Two mounting hole types and sizes
- Alarm function (overheating)
  - Alarm output indicator (red LED), disconnect standard output, alarm output
- High dielectric strength: 4000 VAC (select models)
- Rated input voltage: 4-30 VDC, 24 VAC, 90-240 VAC
- Rated load voltage: 24-240 VAC, 48-480 VAC
- Rated load current: 15 A, 30 A, 40 A, 50 A, 75 A
- High heat dissipation efficiency with ceramic PCB and integrated heatsink
- Zero cross turn-on and random turn-on models available
- Input indicator (green LED)
- Various mounting methods (DIN rail, panel) – SRH2/SRH3 series
  - ※DIN rail mounting not available for 50 A and 70 A load current models

## APPLICATION

- Solid state relays used for temperature control of SMT machinery



# SR1/SRH1/SRC1/SRS1/SRPH1 Series

## Single Phase Solid State Relays



### FEATURES

#### SR1 Series

Detachable Heatsink Type



- Compact, universal design for flexible installation
- Rated input voltage: 4-30 VDC, 90-240 VAC
- Rated load voltage: 24-240 VAC, 48-480 VAC
- Rated load current (resistive load): 15 A, 25 A, 40 A, 50 A, 75 A

#### SRH1 Series

Integrated Heatsink Type



- DIN rail mount or panel mount installation
- Rated input voltage: 4-30 VDC, 90-240 VAC, 24 VAC
- Rated load voltage: 24-240 VAC, 48-480 VAC
- Rated load current (resistive load): 15 A, 25 A, 30 A, 40 A, 60 A

#### SRC1 Series

Slim Detachable Heatsink Type



- Slim, compact size (22.5 mm width)
- Rated input voltage: 4-30 VDC, 90-240 VAC
- Rated load voltage: 24-240 VAC, 48-480 VAC
- Rated load current (resistive load): 15 A, 25 A, 30 A

#### SRS1 Series

Socket Type



- Socket type for easier installation and maintenance
  - SRS1-A: Autonics SK-G05 sockets (AC, DC, AC/DC)
  - SRS1-B: Universal LY2 sockets (AC)
- Rated input voltage: 4-24 VDC (SRS1-A), 4-30 VDC (SRS1-B)
- Rated load voltage:
  - SRS1-A: 24-240 VAC, 5-100 VDC, 5-200 VDC, 5-240 VAC/5-200 VDC (AC/DC type)
  - SRS1-B: 90-240 VAC
- Rated load current (resistive load): 1 A, 2 A, 3 A, 5 A

#### SRPH1 Series

Analog Input Type



- Phase control and cycle control with 4-20 mA analog input
  - Phase control (output power control / phase angle control)
  - Cycle control (fixed cycle / variable cycle)
- Rated input voltage: 4-20 mA (analog input)
  - Rated load voltage: 100-240 VAC, 200-480 VAC
  - Rated load current (resistive load): 20 A, 30 A, 60 A

### FEATURES

#### Common Features

- Slim and compact design
- High dielectric strength: 4000 VAC (except SRS1)
- High heat dissipation efficiency with ceramic PCB
- LED status indicators

### APPLICATION

- Solid state relays used in conjunction with temperature controllers during package sealing process in food packaging machines.



# SPB Series

## High Efficiency Switching Mode Power Supplies



### FEATURES

- DIN rail mount and screw mount methods
- Efficient power conversion
  - High conversion efficiency up to 92% with LLC circuit (SPB-240)
  - Stable power supply with minimal noise and ripple
- Space efficient design
  - Slim and compact size for maximum space efficiency
  - Uniform depth size (except SPB-015/030) for neat and tidy installation
- Safety and user-friendly features
  - Terminal protection cover (SPB-060/120/180/240)
  - Easy wiring with rising clamp terminal (SPB-015/030)
  - Inrush current prevention, output overcurrent prevention, output overvoltage prevention, output short-circuit protection, circuit overheating protection
  - Low output voltage indicator (red LED), output indicator (green LED)
- Output power: 15W, 30W, 60W, 120W, 240W



# DS/DA Series

## Intelligent Type Digital Display Units

Display Units



### FEATURES

- Simple wiring without soldering
  - Multi-stage connection using expansion connectors or ribbon cables
  - Power supply and data wiring required on base unit only
- Various input options:
  - Serial input, Parallel input, RS485 communication input, RS485 communication time sync display, PT temperature sensor input, PT temperature sensor + RS485 communication input
- Expandable up to 24 units with multi-stage connection
- Available in various sizes: 16 mm, 22.5 mm, 40 mm, 60 mm
- Available in 7-segment display and 16-segment display types
- Available in red display and green display types



# ARM / ARD Series

## Modbus RTU & DeviceNet Digital Remote I/O

Field Network Devices



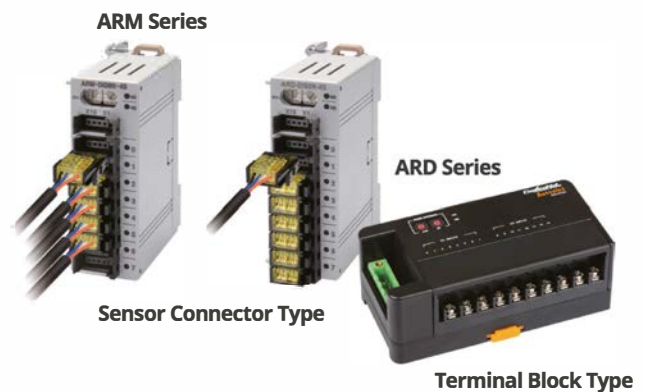
### FEATURES

#### [ARM Series]

- Modbus RTU protocol digital remote I/O
- Additional expansion
  - Expand up to 63 base units per master unit
  - Expand up to 7 expansion units per base unit (up to 64 points)

#### [ARD Series]

- DeviceNet protocol digital/analog remote I/O
- Additional expansion
  - Standard terminal block type: connect up to 3 expansion units
  - Sensor connector type: connect up to 7 expansion units
  - I/O points can be expanded up to 64 points



# LP-S070 / GP-S070 Series

## 7-Inch LCD Color Display Logic / Graphic Panels



### FEATURES

- All-in-one device featuring HMI + PLC + I/O module (LP-S070)
- Graphic HMI with simple operation and configuration (GP-S070)
- 7-inch widescreen analog resistive LCD touchscreen
- Data logger function: store and backup data from control devices
- Connection interfaces: RS232C/RS422/Ethernet/USB
- Software update and support via Autonics website



LP-S070 Series

GP-S070 Series

### APPLICATION

- Logic panels used with counters to monitor quantity and barcode recognition of packaged boxes during shipping process



# MT4 Series

## Digital Panel Meters

Panel Meters



### FEATURES

- Various input/output options (default option: indicator/no output)
  - Input: DC voltage, DC current, AC voltage, AC current
  - Output: RS485 communication output, PV transmission output (DC 4-20 mA), NPN/PNP open collector output, relay contact output
- Maximum allowed input: 50 VDC, DC 500 mA, 250 VAC, AC 5 A (MT4N)  
5 VDC, DC 500 mA, 500 VAC, AC 5 A (MT4W/Y)
- Display range: -1999 to 9999
- AC frequency measurement (range: 0.1 to 9999 Hz)



MT4N Series

# M4NN Series

## Compact Digital Panel Meters



### FEATURES

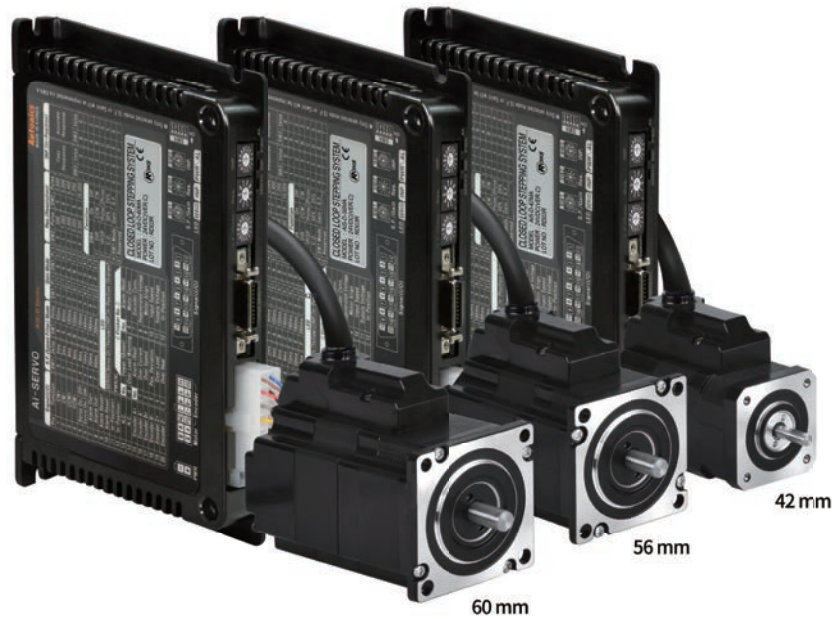
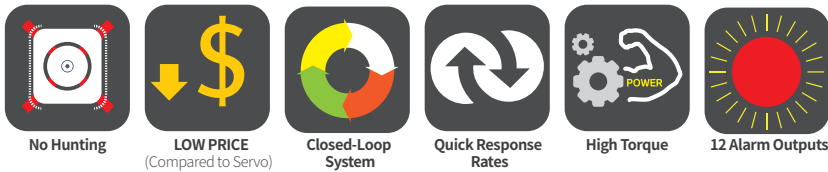
- Various input options: DC voltage, DC current, AC voltage, AC current
- Isolated input and power modules allow powering of multiple units using a single power supply
- Display range: -1999 to 9999
- AC frequency measurement (range: 0.1 to 9999 Hz)
- Various functions: high/low-limit display scale, power factor display, peak display value monitoring, display cycle delay, zero-point adjustment, peak display value correction



(W) 48 mm × (H) 24 mm × (L) 46 mm

# AiS Series

## 2-Phase Closed Loop Stepper Motor System



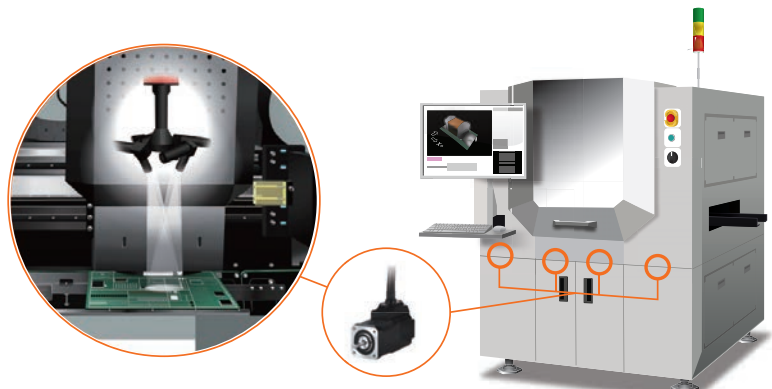
### FEATURES

- Low cost closed loop system compared to servo motors with quick response rates for better continuous drive operation
- Low vibration during low speed drive and high torque during high speed drive
- No tuning required (easy gain setting using adjuster)
- Holding torque and no vibration (hunting) during position hold make it ideal for precision machines including optical inspection
- Various encoder resolutions: 500, 1000, 1600, 2000, 3200, 3600, 5000, 6400, 7200, 10000 (10-stages)
- Various alarm outputs: overcurrent, overspeed, overheating, motor connection error, encoder connection error, etc. (12 alarms)
- Frame sizes: 42 mm, 56 mm, 60 mm

※ Applications: semiconductor equipment, 3D printers, optical inspection machines, SMT machines, cartesian robots, conveying equipment, alignment stages, and other precision machines.

### APPLICATION

- AiS series closed loop stepper motor system used for vertical axis control of vision equipment on 3D inspection machinery.





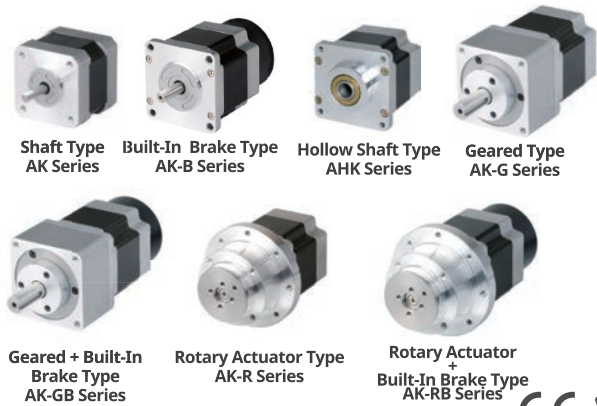
# AK(B)/AHK/AK-G(B)/AK-R(B) Series

## 5-Phase Stepper Motors



### FEATURES

- Compact design and lightweight with high accuracy, speed, and torque
- Space-saving design ideal for building compact-sized systems
- Various types: shaft, hollow shaft, brake, geared, geared-brake, rotary actuator, rotary actuator-brake type
- Various frame sizes: 24, 42, 60, 85 mm
- Economical and cost-efficient



# MD5 Series

## 5-Phase Stepper Motor Drivers



### FEATURES

- Bipolar constant current pentagon drive type
- Auto-current down and self-diagnosis function
- Microstepping drive (max 250 divisions)
- Isolated photocoupler input design minimizes influence from external noise
- Multi-axis control (MD5-HD14-2X/3X)



# PMC-2HSP/N Series

## 2-Axis Programmable Motion Controllers



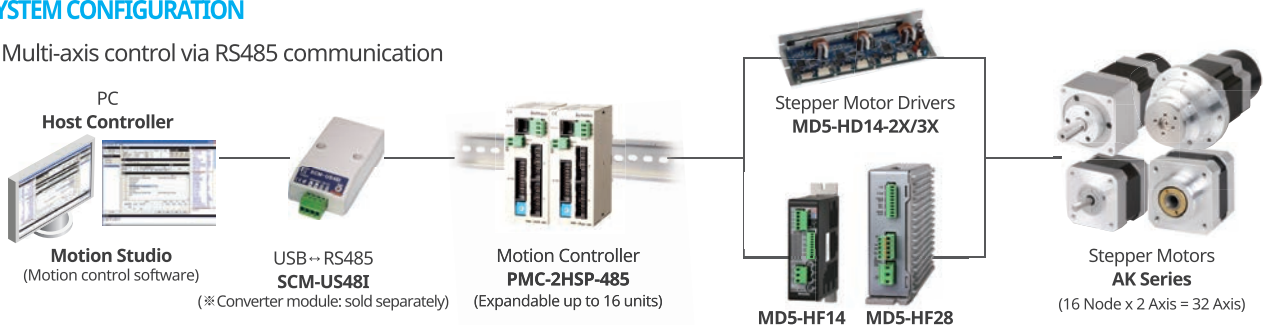
### FEATURES

- High-speed independent 2-axis control with processing speed up to 4 Mpps
- 17 control commands and up to 200 steps of operation programming
- Multiple control of up to 32-axes (16 units) with RS485 communication
- 4 operation modes: scan, continuous, index, program
- Connection interfaces: RS232C/RS485/USB/Parallel I/O



### SYSTEM CONFIGURATION

- Multi-axis control via RS485 communication



# I/O Terminal Blocks

Highly Durable and Compatible I/O Terminal Blocks



## Interface Type

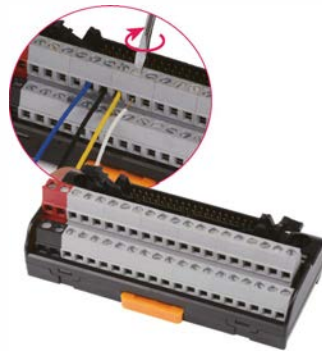
### AFL Series

One-Push Screwless Type



### AFR Series

Rising Clamp Type



### AFS Series

Standard Type



## Common Type

### ACS Series



## Sensor Connector Type

### AFE Series



## Relay Type

### ABS Series

Standard Type



### ABL Series

Screwless Type

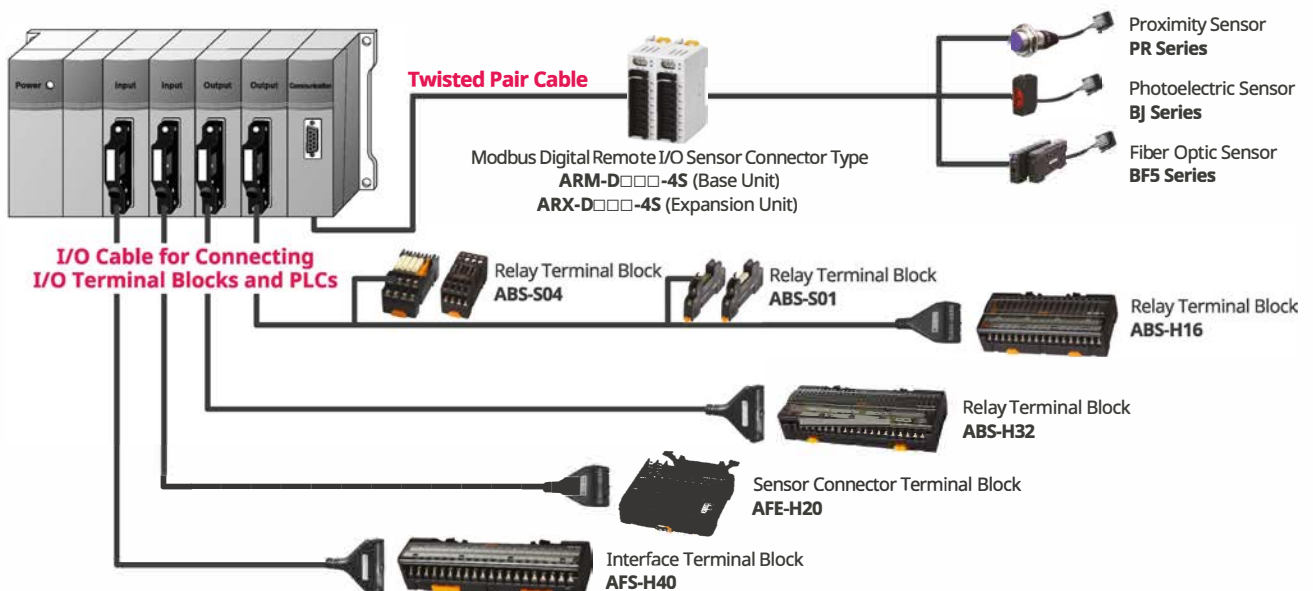


### ASL Series

SSR Type



## SYSTEM CONFIGURATION



# CJ Series

## Connector Cables

### FEATURES

- Compatible with various PLCs and control devices (Autonics, LSIS, Mitsubishi, etc.)
- Available in various lengths (0.5 m, 1.0 m, 1.5 m, 2.0 m, custom)
- Various pin sizes (20-pin, 37-pin, 40-pin, 50-pin)
- Diverse options and configurations to fit user requirements



# PT Series

## M12 Connector Sensor Distribution Boxes

### FEATURES

- Available models:
  - 5-pin M12 connector types (cable/connector/spring terminal/plug-in terminal)
  - 4-pin M12 connector type (cable)
- Supply power to multiple sensors using a single power supply
- Simplify complicated wiring and maintenance work
- Check operation status with LED indicators (green, red LED)
- Supports 1-signal, 2-signal (DC 4-wire type)



PT-P (plug-in terminal type), PT-S (spring terminal type) series available in black and blue models.

# CNE Series

## Sensor Connectors



### FEATURES

#### ■ Common Features

- Significantly reduce installation work and time
- Features high density mounting and contact pitch of 2 mm
- Compatible with e-CON connectors
- Each pin can hold up to 3A of current

#### ■ Wire Mount Plug/Socket

- Compact and reliable one-touch type sensor connector
- Wire mount plug / socket enables transit connection of wires
- Visual guide on wire thicknesses with colorful covers
- Visual guide on status of wire connection through translucent cover

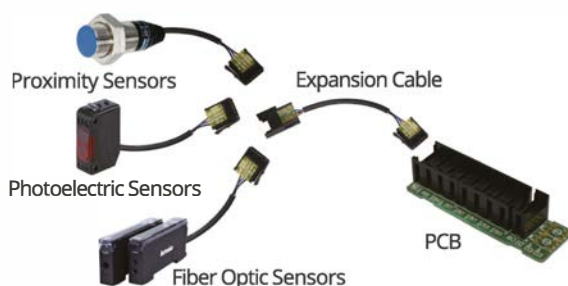
#### ■ Board Mount Socket

- Position contact point in mold to avoid electric shock or short-circuit

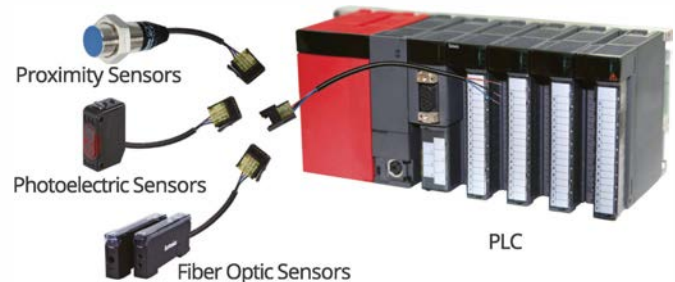


### SYSTEM CONFIGURATION

#### • Sensors ↔ Expansion Cable ↔ PCB










#### • Sensors ↔ PLC



# KRN1000 Series

## LCD Touchscreen Paperless Recorders



 5.6" Touchscreen	 Up to 16 Input Channels	 Various Input Types	 Various Communication Methods
 9 Different Graph Types	 Compact Rear Length Size	 PC Monitoring	



### FEATURES

- 5.6-inch TFT color LCD (640×480) touchscreen display with excellent visibility and intuitive control interface
- Supports 27 input types (thermocouple, RTD, analog voltage and current[shunt])
- 4 / 8 / 12 / 16 input channel models available
- Various communication methods (USB, RS422/485, Ethernet) supported
- 25 to 250 ms high-speed sampling, 1 to 3600 s recording cycle
- 200 MB internal memory and external memory support (SD/USB up to 32 GB)
- Store and backup internal data to external memory (SD/USB)
- 9 different graph types available
- Various option input/output available: digital input (contact/non-contact), alarm output, transmitter power output
- Compact, space-saving design (rear length: 69.2 mm)

### APPLICATION

- Record and store real-time measurement data in thermo-hygrostat systems



# KRN100 Series

## 100 mm Hybrid Recorders



### FEATURES

- Hybrid strip chart recorder + paperless recorder
- Data logger function: print saved data from internal memory or USB
- Status monitoring and parameter configuration through USB, RS485, or Ethernet
- 25 ms high-speed sampling, 240 mm/H high-speed recording
- 100 mm strip chart recording in 6 colors
- Supports up to 12 input channels and 27 input types



# KRN50 Series

## 50 mm Hybrid Recorders



### FEATURES

- 50 mm strip chart recorders with thermal transfer printing
- Data logger function for paperless recording
- Real-time monitoring and configuration on PC/PLC via RS485 communication or dedicated communication port
- Simultaneous 2-channel recording (graph mode, digital mode)
- Supports various input types (RTD, thermocouple, analog)



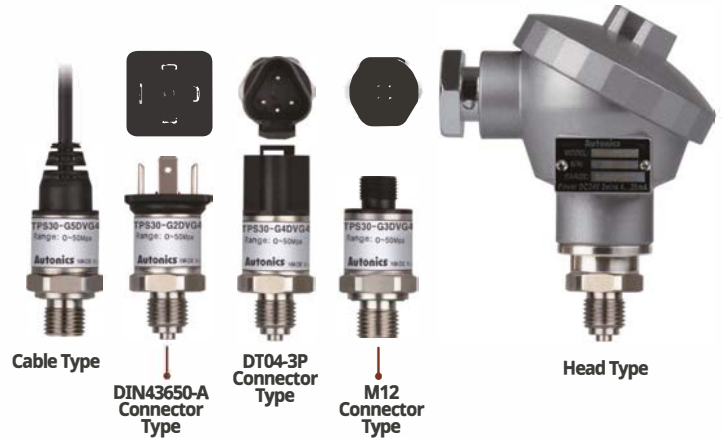
# TPS30 Series

## Stainless Steel Pressure Transmitters



### FEATURES

- Robust build allows high or low pressure measurement in high and low temperature environments
  - : high pressure (0 to 60 MPa / 0 to 600 bar),
  - low pressure (0 to 2 MPa / 0 to 20 bar)
- temperature range (-40° to 125°C) (may vary by model)
- For diverse applications including packaging machines, heavy machinery, factories, and shipbuilding
- 316L stainless steel diaphragm for high corrosion resistance (except head component of head types)
- Analog output : current (DC 4-20 mA), voltage (1-5 VDC)
- Available thread sizes: G3/8, G1/4, R1/2
- IP67 protection structure (IEC standard) (DIN43650-A connector type: IP65)



# KN-1000B Series

## Compact Digital/Bar Graph Indicators



### FEATURES

- High accuracy with 16-bit ADC ( $\pm 0.2\%$  F.S.)
- Supports various input types (RTD, thermocouple, analog)
- Bar graph with 101 LEDs (green), 4-digit digital LED display (red)
- Various output options and customized functions
- Built-in power supply for sensors (24 VDC)



# KN-2000W Series

## High Accuracy Multi-Color Indicators



### FEATURES

- High accuracy with 16-bit ADC ( $\pm 0.2\%$  F.S.)
- Supports various input types (RTD, thermocouple, analog)
- Auto display color change function (errors/alarms)
- Display range: -19999 to 19999
- Various output options and customized functions
- Built-in power supply for sensors (24 VDC)



### Process Automation Devices



**DPU/DPUS Series**  
Digital Thyristor Power Controllers



**CN-6000 Series**  
Isolated Converters with 3-Color Display



**KPN Series**  
High Accuracy Digital Process Controllers



**PTF30 Series**  
2-Wire Smart Pressure Transmitters



**KT-302H Series**  
Intelligent Type Pressure Transmitters



**KT-502H**  
Intelligent Type Temperature Transmitters

# S/L/B Series

Control Switches, Pilot Lights, and Buzzers (※) Illuminated Type Available

## Round/Square Push Button Switches

### S16PR Series (Ø16)



S16PR-E□(※)



S16PRS-H□(※)



S16PRT-H□(※)

### S2PR Series (Ø22/25)



S2PR-P1□



S2PR(U)-P3□(※)



S2PR(U)-E□(※)



S2PRS(U)-P□(※)

### S3PR / S3PF / SQ3PFS Series (Ø30, □30)



S3PR-P1□



S3PF(U)-P□(※)



SQ3PFS(U)-P□(※)

## Selector Switches

### S16SR Series (Ø16)



S16SR-S□(※)



S16SRS-L□(※)



S16SRT-S□(※)

### S2SR Series (Ø22/25)



S2SR-S1/3/5/7/A/C□



S2SRN-1/3/5/7/A/C□(※)



S2SR-S2/4/6/8/B/D□



S2SRN-2/4/6/8/B/D□(※)

### S3SF Series (Ø30)



S3SF-S1/3/5/7/A/C□



S3SFN-1/3/5/7/A/C□(※)



S3SF-S2/4/6/8/B/D□



S3SFN-2/4/6/8/B/D□(※)

## Emergency Switches

### S16ER Series (Ø16)



S16ER-E□



S2ER-E1□



S2ER-E2□



S2ER-E3□



S2ER-E4□(※)



S2ER-E5□

### S2ER Series (Ø22/25)



(UL - except emergency switches, buzzers)

### Pilot Lights

#### L16RR Series (Ø16)



L16RR-E(※)



L16RRS-H(※)



L16RRT-H(※)

#### L2RR Series (Ø22/25)



L2RR-L1(※)



L2RR-L2(※)



L2RR(U)-L3(※)



L2RR(U)-L4(※)

#### L3RF Series (Ø30, □30)



L3RF(U)-L3(※)



LQ3RF(U)-L4(※)

### Key Selector Switches S16KR / S2KR / S3KF Series (Ø16, Ø22/25, Ø30)



S16KR



S16KRS



S16KRT



S2KR



S3KF

### Mushroom-Head Push Button Switches S16BR / S2BR Series (Ø16, Ø22/25)



S16BR-H(※)



S2BR-P1□

### Double Push Button Switches S2TR Series (Ø22/25)



S2TR-P3(※)

### Buzzers

#### B6MA Series



Melody Buzzer

#### B2PB-B1D



Piezo Buzzer

#### B2NB-B1D Series



Magnetic Buzzer

### Accessories

※ Only for Ø16



Switch Contact Blocks

※ Only for Ø22/25, Ø30, □30



Emergency Switch Protective Shrouds



Emergency Switch Nameplates



Waterproof Cap



Switch Enclosures



※ Only for Ø16

Locking Handle for Switches



※ Only for Ø16

Lens removal tool

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Our mission is to enrich the quality of human lives by delivering new values that will make the world more convenient.



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