PRODUCT GUIDE

Autonics

PRODUCT
GUIDE

Autonics
Trusted Provider of
Industrial Automation Solutions

Autonics is a leading provider of automation solutions from South Korea. We develop and manufacture a wide range of automation products which are marketed worldwide.

With nearly half a century experience in automation, over 1,600 employees in 12 international offices, and 3 manufacturing centers, we offer optimized solutions for customers across the globe.

Autonics offers a wide range of products for all three main components of automation: sensors, controllers, and actuators.

We offer automation solutions to raise production efficiency and make automation easier for users.

Our technology is trusted and adopted in various industrial applications and also applied in day-to-day automation devices, to help contribute to the improvement of quality of life. We will continue to build on our technology and solutions to make industrial processes easier, more flexible, and more convenient.

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SAFETY

Safety products are installed in potentially dangerous or hazardous areas to safeguard personnel from injury and protect equipment from damage.

- Safety Light Curtains
- Safety Controllers
- Safety Door Switches
- Safety Switches
- Safety I/O Terminal Blocks

Safety Light Curtains / Safety Controllers

SFL / SFLA Series

Safety Light Curtains

- Standard type (SFL) and high performance type (SFLA) safety light curtains
- Available in 3 detection type models (finger, hand, hand-body detection) and various protection height models
- Various safety-related functions & self-diagnosis functions
- Various status readings with 7-segment display and status indicators
- Certifications : Type 4 ESPE (AOPD), SIL3, SIL CL3, Category 4, PL e

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SFC / SFC-R Series

Safety Controllers

- Slim size (17.5 mm / 22.5 mm / 35 mm (SFC-R))
- LED indicator to display various operation status
- Screw / screw-less wiring connection models
- OFF-delay output and time setting
- Certifications : SIL3, SIL CL3, PL e

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Safety Door Switches

SFDL2 Series

Safety Flat Type Door Lock Switches

• Slim size : W 90 x H 105 x D 35.5 mm
• Head unit can be rotated to change insert direction of operation key
• Various contact types (up to 6-contacts)
• Manual unlock function (release key) for emergencies during installation or testing
• Mechanical lock-solenoid release, solenoid lock-mechanical release models

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SFDL Series

Safety Door Lock Switches

• Head unit can be rotated to change insert direction of operation key
• Various contact types (4-contact (connected/not connected), 5-contact, 6-contact)
• Connector type (easy installation) and terminal type (easy maintenance) available
• Manual unlock function (release key) for emergency and testing
• Certifications : IEC/EN 60947-5-1, EN ISO 14119, GS-ET-15, UL 508

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SFD Series

Safety Door Switches

• Head unit can be rotated to change insert direction of operation key
• Various contact types (4-contact (connected/not connected), 5-contact, 6-contact)
• Connector type (easy installation) and terminal type (easy maintenance) available
• Metal or plastic head types available
• Certifications : IEC/EN 60947-5-1, EN ISO 14119, GS-ET-19, UL 508

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SFN Series

Safety Non-Contact Door Switches

• Electromagnetic induction method
• Control up to 30 units with a single controller (SFC-N)
• Easy installation with cable connector models and cable/connector accessories
• Stable detection of actuators in front / rear, top / bottom, right / left direction doors
• U-shaped design with 2-color operation indicators visible from 3 sides (ON : green, OFF : red)

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Safety Switches / Safety I/O Terminal Blocks

SFEN Series

Safety Grip Type Enabling Switches

• Various lineup models available (standard / stop button / momentary button type)
• High operation sensitivity with 3-position snap action
• Enable operation indicator (green LED)
• Various contact types (standard / stop button / momentary button type)
• Secure connection with cable gland

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SF2KR Series

Safety Key Selector Switches

• Check lock / unlock status with the front solenoid operation indicator
• Various line-up of key release direction, N.C. contact powered location, and lock location depending on the general / lockable type
• Contact block option up to 4 contacts
• 10 different key types

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SF2ER Series

Emergency Stop Button Switches

• Easy installation and removal of contact blocks using levers
• Install up to 3 contact blocks on a single switch
• Compatible with O type and Y type terminals
• Oil-resistant IP65 protection structure
• Certifications : EN 60947-5-1, EN ISO 13850, UL 508

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SFT Series

Safety Relay Terminal Blocks

• Relays with force guided contacts for safe control system (IEC 61810-3)
• For driving various loads using PLC output signals
• Redundant circuits and signal feedback for safety
• Available in 4-pole and 6-pole models
• Available in screw type and screwless type models

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MACHINE VISION

Machine vision smart camera systems offer ideal machine vision solutions for identifying various objects during manufacturing processes.

• Smart Camera

• Vision Sensors

Smart Camera / Vision Sensors

VC Series

5 M Monochrome Smart Cameras

• Global shutter method for accurate image capturing with minimal motion blur
• Various inspection functions : alignment, brightness, contrast, area, edge, shape, length, angle, diameter, object counting, barcode, OCR, OCV, patterns
• Set up to 64 separate work group (32 inspection points per work group)
• Save data to FTP servers

VG Series

0.4 M Vision Sensors (Color / Monochrome)

• Vision sensors with integrated LED lighting
• Global shutter method for accurate image capturing with minimal motion blur
• Enhanced optical performance with light interference prevention technology
• Various inspection functions
  : alignment, brightness, contrast, area, edge, shape, length, angle, diameter, object counting
  : color identification, color area, color object counting (only color type)

SENSORS

Sensors are commonly used components in automation used to detect changes in the environment and transmit the information electronically.

- LiDAR
- Displacement Sensors
- Photoelectric Sensors
- Photomicro Sensors
- Fiber Optic Sensors
- Area Sensors

- Door Sensors
- Ultrasonic Sensors
- Linear Positioning Sensors
- Proximity Sensors
- Rotary Encoders

LiDAR

LSC Series

2D 270° Laser Scanners

- 270° detection angle, 25 m detection distance
- Compact size for flexible installation (W 60 mm x H 86 mm x L 60 mm)
- Number of field sets : 16 (1 set : consists of 3 subfields)
- Various filter function for accurate detection
- Ethernet communication supported

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LSE2 Series

2D 1-Channel Laser Scanners

- 90° detection angle, 5.6 m × 5.6 m detection area
- Compact size for flexible installation (W 120 mm x H 46.5 mm x L 89.4 mm)
- Various filter function to prevent malfunction due to fog, rain, snow and dusts
- Operation indicator to identify operation status and errors
- Ethernet communication supported

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LSE3 Series

2D 4-Channel Laser Scanners

- 90° detection angle, up to 10 m x 10 m detection area
- Supports up to 4 channels
- Aluminum die-cast housing minimizes interference from 5 G communication repeaters
- Various filter functions to prevent malfunction due to fog, rain, snow and dust
- Operation indicator to identify operation status and errors

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Displacement Sensors

BD Series

Laser Displacement Sensors (Sensor Head)

- Reference distance :
  - Diffuse reflective type : 30 / 65 / 100 / 300 / 600 mm
  - Regular reflective type : 30 / 65 / 100 mm
- Maximum resolution : 1 μm (vary by model)
- Various calculation functions supported (addition, subtraction, average)
- Various filter functions for stable measurement (movement average, differential, median)

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BD-A1 Series

Laser Displacement Sensors (Amplifier Unit)

- Easy maintenance with detachable sensor head / amplifier unit
- Interconnection of up to 8 sensor amplifier units
  : Mutual interference prevention function and auto channel sorting

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BD-C Series

Laser Displacement Sensors (Communication Converter)

- Supports both RS232C and RS485 communication in one device
- Connect up to 8 amplifier units
- Can be powered directly by amplifier units without additional wiring
- Support for dedicated device management software (atDisplacement)
- Set communication speed and addresses using DIP switch without connecting to host devices

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Photoelectric Sensors

BJ Series

Compact High Performance Photoelectric Sensors

- Compact size : W 10.6 mm x H 32 mm x L 20 mm
- Light ON / Dark ON operation mode switch (except BJG30-DDT)
- Sensitivity adjuster (except BJG30-DDT)
- Built-in reverse polarity protection circuit and output overcurrent protection circuit
- Mutual interference prevention function (except BGS reflective type)

CE UK CA EAC

BJX Series

Compact Long Distance Photoelectric Sensors

- Compact size : W 20 mm x H 32 mm x L 11 mm
- High performance lens with long sensing distance
  - Through-beam type : 30 m
  - Diffuse reflective type : 1 m
  - Retroreflective type : 3 m (MS-2A)

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BRQ Series

Cylindrical Photoelectric Sensor

- Excellent noise immunity and minimal influence from ambient light
- Power / output reverse polarity protection circuits and output overcurrent protection circuits
- Mutual interference prevention function (except through-beam type)
- Sensitivity adjuster, Switch between Light ON and Dark ON modes using control wire
- Front sensing type (BRQT, BRQM, BRQP), side sensing type (BRQPS) available

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BTS Series

Ultra-Compact, Slim Photoelectric Sensors

- Ultra-slim width of only 7.2 mm
- Various detection methods and minimum target size : Ø2 mm, Ø0.15 mm
- Maximum detection distance : 1 m (through-beam type)
- Stability indicator (green LED) and operation indicator (red LED)
- IP67 protection structure (IEC standard)

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BTF Series

Ultra-Compact, Thin Photoelectric Sensors

- Ultra-thin size of only 3.7 mm
- Various detection methods and minimum target size : Ø2 mm, Ø0.2 mm
- Detecting distance may vary by environmental factors
- Maximum detection distance : 1 m (through-beam type)
- IP67 protection structure (IEC standard)

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BC Series

Color Mark Sensors

- 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)
- Operation indicator (red LED), stability indicator (green LED), timer indicator (orange LED)

CE UK EAC

BH Series

Front/Side Mount Photoelectric Sensors

- Compact size : W 14 mm x H 34.5 mm x L 28 mm
- Front mounting (M18 nut) or side mounting (M3 screws)
- Simultaneous NPN / PNP open collector output
- Mirror Surface Rejection (MSR) function allows stable detection of highly reflective targets
- Sensitivity adjuster included

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BL Series

Liquid Level Photoelectric Sensors

- Compact size: W 23 mm x H 14 mm x L 13 mm
- 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)
- Light ON / Dark ON operation mode switch
- Built-in reverse polarity protection circuit and output overcurrent protection circuit

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BUP Series

U-Shaped Photoelectric Sensors

- Various sensing distance lineup : 30 mm, 50 mm models
- High speed response time under 1 ms
- Sensitivity adjustable model available
- Switch between Light ON and Dark ON modes using control wire

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BPS Series

Flat Type Photoelectric Sensors

- Compact thin and flat design for easy installation
- Long sensing distance up to 3 m
- IP67 protection structure (IEC standard)

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BX Series

Universal AC / DC Photoelectric Sensors (Wire Terminal Type)

- Universal AC / DC models (relay contact output) available
- Output types : relay contact (AC / DC type), NPN / PNP open collector (DC type)
- Sensitivity adjuster
- Timer function (built-in timer models) : ON delay, OFF delay, One-shot delay
- Self-diagnosis function (green LED ON indicates stable operation)

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BA Series

Diffuse Reflective Photoelectric Sensors with Long Sensing Distance

- Long sensing distance up to 2 m
- Built-in stability indicator
- Includes sensitivity adjustment function
- 2 color LED display
- IP64 protection structure (IEC standard)

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BEN Series

Universal AC / DC Photoelectric Sensors

- Universal AC / DC models (relay contact output) available
- Light ON / Dark ON operation mode switch
- Sensitivity adjuster (except through-beam types)
- Stability indicator (green LED) and operation indicator (red LED)
- Output types : relay contact (AC / DC type), NPN / PNP open collector (DC type)

CE UK EAC

BJP Series

Photoelectric Sensors for PCB Detection

- 30 mm x 3 mm light beam (at 30 mm distance) provides accurate detection of PCBs regardless of holes, protrusions, intrusions, or errors on the boards.
- Background suppression (BGS) sensing method allows stable detection regardless of the color, texture or surface of the background object
- Sensing distance : 10 to 100 mm (adjustable distance : 20 to 100 mm)
- Light ON / Dark ON operation mode switch

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BJR / BJR-F Series

Oil-Resistant / Oil-Proof Photoelectric Sensors

- Optimized for automotive and machine tool industries such as cutting oil or lubricants
  - BJR (oil-resistant type) : special coating prevents oil drop / powder from penetrating into the product
  - BJR-F (oil-proof type) : operates normally even when oil drop / powder penetrates into the product
- Long sensing distance (Through-beam type : 15 m, Diffuse reflective type : 1 m, Retroreflective type : 3 m)

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BMS Series

Side Sensing Type Photoelectric Sensors

• High-speed response time under 1 ms
• Switch between Light ON and Dark ON modes using control wire
• Sensitivity adjuster (except through-beam types)
• Built-in reverse polarity protection circuit and output overcurrent protection circuit

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BY Series

Compact Photoelectric Sensors with Synchronous Detection

• Compact size : W 12 mm x H 30 mm x L 16 mm
• Synchronous detection between emitter / receiver reduces errors from ambient light
• High-speed response time under 1 ms
• Standard type and side sensing type available
• Built-in reverse polarity protection circuit and output overcurrent protection circuit

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BYD Series

Compact Photoelectric Sensors

• Compact size : W 12 mm x H 32 mm x L 18 mm
• Performance unaffected by color of the target object (convergent reflective type)
• Operation indicator (red LED)
• Timer function to set OFF delay time (0.1 to 2 sec) (convergent reflective type)
• Built-in reverse polarity protection circuit and output overcurrent protection circuit

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BUM Series

4-Channel U-Shaped Photoelectric Sensors

• Independent 4-channel output
• High-speed response time under 1ms
• Built-in reverse polarity protection circuit and output overcurrent protection circuit
• IP65 protection structure (IEC standard)

CE UK EAC

Photomicro Sensors

BS5 Series

Groove-Depth 9 mm Photomicro Sensors

• Various shapes available for installation flexibility (K, T, V, L, Y, F, R, TA types)
• Sensing side and body level minimize detection errors occurring from foreign substances
• Operation indicators viewable from multiple directions
• Indicator ON when light received and indicator ON when light blocked models available
• Shock resistance : 15,000 m/s² (approx. 1,500 G), vibration resistance : 10 to 2,000 Hz
  (1.5 amplitude), high-speed response frequency : 2 kHz

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BS4 Series

Groove-Depth 9 mm Photomicro Sensors with Built-In Connector

• Various shapes available for installation flexibility (K, L, R, T, TA, F, Y types)
• Compact size with built-in connector (24.1 mm)
• Minimize detection errors and improved visibility
  - Sensing side and body level minimize detection errors occurring from foreign substances
  - Operation indicators viewable from multiple directions
• Indicator ON when light received and indicator ON when light blocked models available

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BS3 Series

Groove-Depth 6.5 mm Photomicro Sensors

• Ultra-compact size : 16 mm x 6 mm
• Various shapes available for installation flexibility (K, F, R, U, L types)
• Minimize detection errors and improved visibility
  - Sensing side and body level minimize detection errors occurring from foreign substances
  - Operation indicators viewable from multiple directions
• Indicator ON when light received and indicator ON when light blocked models available

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BS5-P Series

Push Button Type Photomicro Sensors

• Button switch operation : accurate detection regardless of material, color,
  or reflectivity of target object
• Optical detection (emitter / receiver) by button operation guarantees mechanical life cycle of
  5 million operations
• 4 red LED operation indicators (side : 2, top : 2) for higher visibility of operation status
• Optimized for transport detection of semiconductor wafer enclosures
  (FOUP, FOSB, etc.)

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Fiber Optic Sensors

BF5 Series

High Speed Single / Dual Digital Display Fiber Optic Amplifiers

• Available in dual and single display models
• Dual digital display for displaying present value and set value (BF5□-D)
• 5 response speeds : Ultra-fast, fast, standard, long-distance, ultra-long-distance mode
• Display range : 0-4000 (standard mode), 0-9999 (long distance mode)
• Saturation prevention function : prevent errors from saturation of received light

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BFX Series

LCD Digital Display Fiber Optic Amplifiers

• LCD dual display for displaying present value and set value
• High resolution (1 / 10,000) for detecting tiny targets
• 5 response speeds : Ultra-fast, fast, standard, long-distance, ultra-long-distance mode
• Saturation prevention function: prevent errors from saturation of received light

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BF4 Series

Digital Display Fiber Optic Amplifiers

• High-speed response under 0.5 ms
• Standard type / external synchronization type / remote sensitivity setting type
• Auto sensitivity adjustment / remote sensitivity adjustment
• Mutual interference prevention function, self-diagnosis function
• Built-in reverse polarity protection circuit, output short-circuit (overcurrent) protection circuit

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BF3 Series

Dual Adjustment Fiber Optic Amplifiers

• Simple DIN rail mount installation
• High-speed response under 1 ms
• Precise sensitivity adjustment with dual adjusters (COARSE, FINE)
• Switch between Light ON and Dark ON modes using control wire
• Built-in reverse polarity protection circuit, output short-circuit (overcurrent) protection circuit

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FD / FT / FL / GD / GT Series

Fiber Optic Units

• Various head types and sensing methods for diverse environments
  - Thread, cylindrical, flat, L-shaped, plastic, perpendicular, stainless steel, U-shaped and area detection head types
  - Through-beam, retroreflective and convergent reflective methods
• Various cable types available for diverse environments

RoHS EAC

Area Sensors

BWC Series

Cross-Beam Area Sensors

• Self-diagnosis output (check sensing screen contamination and blocking of optical axis)
• Long sensing distance up to 7 m
• Easy installation with installation mode function
• 14 configurations (number of optics / optical pitch / detection area)
• 3-point cross-beam type detection minimizes non-detection area

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BW Series

General Purpose Area Sensors

• Ambient illuminance : 100,000 lux (upgraded feature)
• Long sensing distance up to 7 m
• 22 configurations (number of optics : 4 to 48 / optical pitch : 20, 40 mm / detection area : 120 to 940 mm)
• 20 mm optical pitch minimizes non-detection area (BW20-□)

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BWP Series

Slim Plastic Body Area Sensors

• Flat body (13 mm) area sensors with Fresnel lens
• High strength PC / ABS plastic body
• High-speed response time under 7 ms
• 4 configurations (optical axis : 8 to 20 / detection area : 140 to 380 mm)
• Light ON / Dark ON operation mode switch

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BWPK Series

Slim Body Area Sensors (Picking Sensors)

• Flat and compact size : W 30 mm x H 140 mm x D 10 mm
• Picking indicators on emitter and receiver
• Sensing distance switch (long / short mode switch)
• Light ON / Dark ON operation mode switch
• Mutual interference prevention function (frequency switching)

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BWM / BWML Series

Mapping Sensors

• Mapping sensors for glass substrate detection
• Double scan method (BWM) and line beam detection method (BWML) models available
• Various sensing distance
• Customized models available (sensing channels, sensing target pitch, sensing area)
• Communication output : CC-Link (ver 1.1, 2.0), EtherCAT

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Door Sensors

ADS-A Series

Automatic Door Sensors

• Adjustable hold time switch (2, 7, 15 seconds)
• 4-step detection angle adjustment (7.5˚, 14.5˚, 21.5˚, 28.5˚)
• Adjustable detection area (left / right area elimination)
• Max. detection area : 2,460 mm x 86 mm (height 2.7 m)
• Power supply : 24-240VAC / 24-240VDC (universal AC / DC type), 12-24VAC / 12-24VDC
  (universal AC / DC type)

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ADS-SE1 / 2 Series

Automatic Door Side Sensors

• Long sensing distance : 0 to 10 m
• Ambient lighting : up to 100,000 lux
• Easy connection between sensor head and controller
• Simple sensitivity adjustment (one-touch automatic sensitivity adjustment)
• Self-diagnosis function

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Ultrasonic Sensors / Linear Positioning Sensors

UTR Series

Cylindrical Ultrasonic Sensors

• Detect and measure various material and surface types with ultrasonic sensing
• Various sensing distance (by mount diameter)
- Ø18 mm : 120 to 1,300 mm / Ø30 mm : 600 to 8,000 mm
• Temperature compensation and detection width conversion function for high accuracy
• IO-Link models, Simultaneous digital and analog output models available
• Configure settings and monitor status with ultrasonic sensor programming units (UT-P)

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LPD Series

Inductive Linear Positioning Sensors

• Detect constant linear movements of metal objects with inductive detection
• High resistance to impact with coreless method
• Detection range : 14 mm, 103 mm
• Analog voltage / current output, voltage / current integrated output, IO-Link output
• Various functions : teaching function, OOR (Out-of Range) output function, etc.
• Easy maintenance with IO-Link communication

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Proximity Sensors

PR Series

Cylindrical Inductive Proximity Sensors

- IP67 protection structure (IEC standard)
- Operation indicator (red LED)
- PTFE coating prevents malfunctions caused by welding spatter (spatter-resistant models)

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PRD Series

Long-Distance Cylindrical Inductive Proximity Sensors

- Operation indicator (red LED)
- Communication indicator for IO-Link model (orange, green LED)
- PTFE coating prevents malfunctions caused by welding spatter (spatter-resistant model)
- Strain relief cables: improved flexural strength of cable connecting component
- IP67 protection structure (IEC standard)

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PRFD Series

Full-Metal Cylindrical Long-Distance Inductive Proximity Sensors

- High durability against contact with workpieces or wire brushes
- Reduced risk of malfunction caused by aluminum chips
- 2-color LED indicator for easy status monitoring
- Malfunction identification and predictive maintenance with real-time monitoring
  (IO-Link models : PRFDCM□-□-IL2)
- PTFE coating prevents malfunctions caused by welding spatter (spatter-resistant models)

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PS Series

Rectangular Inductive Proximity Sensors

- Operation indicator (red LED)
- Various sensing sides models (8 mm x 8 mm, 12 mm x 12 mm, 17 mm x 17 mm)
- Alternate frequency models allow adjacent installation of multiple sensors without
  interference (PSN17-□-F)
- IP67 protection structure (IEC standard)

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PFI Series

Flat Type Rectangular Inductive Proximity Sensors

- Operation indicator (red LED)
- Flat, compact design (10 mm height) allows easy installation in limited spaces
- IP67 protection structure (IEC standard)

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AS Series

Rectangular Inductive Proximity Sensors with Long Sensing Distance

- Power indicator (greed LED) and operation indicator (red LED)
- Long sensing distance of 50 mm
- Power supply : 12-48VDC (operating voltage : 10-65VDC)
- Simultaneous output (Normally Open + Normally Closed)
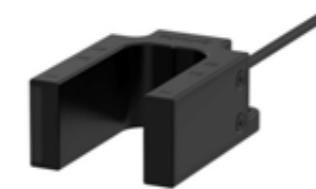- IP67 protection structure (IEC standard)

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CR Series

Cylindrical Capacitive Proximity Sensors

- Detect various materials including metal, iron, stone, plastic, water, and grain
- Built-in sensitivity adjuster for convenient configuration
- Operation indicator (red LED)
- Ideal for level detection and position control

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MU Series

U-shaped Magnetic Proximity Sensors

- Non-voltage magnetic detection method
- Two wiring specifications of cable / cable connector type
- IP67 protection structure (IEC standard)

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PET Series

Inductive Transmission Couplers

- Inductive coupling allows signals to be generated and transmitted without
  additional power supply
- Stable operation in various environmental settings including dust or oil
- Applications : drilling, robotics, automated conveyors system, etc.

EAC

Rotary Encoders

E20S / E30S / E40S / E50S / E68S

Incremental Rotary Encoders (Shaft Type)

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

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E20HB / E40H / E40HB / E58HB / E60H / E80H / E88H / E100H

Incremental Rotary Encoders (Hollow Shaft Type)

· Encoder diameter
  : 20 mm, 40 mm, 58 mm, 60 mm, 80 mm, 88 mm, 100 mm
· Various hollow shaft sizes
· Various resolutions, output codes, control outputs, and cable types available

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E58S / E60H

Incremental Rotary Encoders (Sine Wave)

· Analog sine wave operational amplifier (op-amp) output
· Power Supply : 5 VDC ±5%
· Ø58 mm housing, tapered shaft (E58S)
· Ø60 mm housing, Ø20 mm hollow shaft (E60H)

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EP50S / EP50SP / EP58HB / EP58SC / EP58SS / ENP / EPM50S

Absolute Rotary Encoders (Optical)

· Encoder diameter
  : 50 mm, 58 mm, 60 mm
· Various resolutions, output codes, and cable types available
· Multi-Turn Absolute Rotary Encoders (EPM50S)

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MGA50S / MGAM50S

Absolute Rotary Encoders (Magnetic)

· High accuracy in harsh environments including shock, vibration, dust, and humidity
· Longer service life compared to optical encoders
· MGA50S output codes : BCD, binary, Gray
· MGAM50S output code : binary
· High resolution : up to 1,024 divisions

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EWLS50 Series

Wire-Type Linear Scale Absolute Encoders

• Resolution : 0.1 mm
• Maximum measurement range : 512 mm
• Various output code options : Binary, Gray code

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ENC Series

Wheel Type Incremental Rotary Encoders

• Wheel type encoders ideal for measuring length or speed of continuously moving objects
• Output waveform of measured distance is proportional to International Weights and Measures (meters / inches)
• Power supply : 5VDC ±5%, 12-24VDC ±5%

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ENH Series

Manual Handle Type Incremental Encoders

• Ideal for manual pulse input applications including NC machinery and milling machines
• Resolutions : 25, 100 pulses per revolution
• Control output : Totem pole, Line driver, Voltage output
• Power supply : 5VDC ±5%, 12-24VDC ±5%
※ Portable manual handle type is also available (ENHP Series)

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ENA Series

Side Mount Incremental Rotary Encoders (Shaft Type)

• Die-cast external housing provides excellent immunity to impact
• Designed to mount directly onto frames
• Various resolutions : 1 to 5,000 pulses per revolution
• Various control output options
• Power supply : 5VDC ±5%, 12-24VDC ±5%

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ERB Series

Flexible Shaft Couplings

• Zero backlash
• High-strength aluminum alloy (AL7075-T6)
• High elasticity
• Alumite treated surface provides high corrosion resistance
• 2 connection types (clamp type, screw type)

EAC

FIELD INSTRUMENTS

Field instruments including pressure and temperature transmitters measure and transmit important data in industrial applications and other diverse settings.

• Pressure Sensors
• Pressure Transmitters
• Temperature Sensors / Transmitters

Pressure Sensors

PSQ Series

Dual Display Digital Pressure Sensors

• Pressure measurement of any gas, liquid or oil [fluid type]
• 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)

PSAN Series

Digital Display Pressure Sensors

• Pressure measurement of any gas, liquid or oil
• Auto shift function : with change in the original pressure, the external input adjusts the determined level to match the change in pressure
• Hold function: hold current display value or control output
• Forced output control mode for device testing and maintenance

PSB Series

Rectangular Type Digital Display Pressure Sensors

• High accuracy digital pressure sensor
• Bright red LED display (character height : 9.5 mm)
• High display resolution : negative pressure 0.1 kPa / standard pressure 0.1 kPa, 1 kPa / compound pressure 0.2 kPa
• Various output modes : hysteresis mode, automatic sensitivity adjustment mode

PSM Series

Multi-Channel Pressure Sensor Indicators

• Display 8 (PSM8) or 4 (PSM4) channels of pressure value from analog pressure sensors
• Input range : 1-5VDC, DC 4-20mA (by model)
• Pressure sensor model auto recognition (Autonics PSS series pressure sensors)
• Set PV display color by control output type (red / green)
• Individual output indicators for each channel

PSS Series

Compact Non-Indicating Pressure Sensors

• Rated pressure range :
  - negative pressure (0 kPa to -101.3 kPa)
  - positive pressure (0 kPa to 100.0 kPa or 1000 kPa)
  - compound pressure (-101.3 kPa to 100 kPa)
• Compact size : W 11.8 mm x H 29.3 mm x L 24.8 mm (standard model)

Pressure Transmitters

TPS30 Series

Stainless Steel Pressure Transmitters

• 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)
• Applicable in diverse settings : packaging machines, heavy machinery, and shipbuilding
• Pressure measurement of any gas, liquid, or oil

CE UK EAC

TPS20 Series

Non-Indicating Pressure Transmitters

• Excellent corrosion resistance with stainless steel housing
• High accuracy ±0.3% F.S.
• Various connection method : Head type, DIN connector type, connector cable type
• Various user friendly function : Built-in zero-point, span adjustment (head type)

CE UK EAC

KT-302H Series

Display Type Pressure Transmitters

• HART protocol, Explosion-proof specification : Ex D IIC T6
• Display rotation in 330° range
• Better visibility with supporting backlight function
• Excellent corrosion resistance with stainless steel housing
• High accuracy ±0.2% F.S.

CE UK KS EAC

PTF30 Series

Display Type Pressure Transmitters

• Minimized disturbance effect by improving noise resistance
• Excellent corrosion resistance with stainless steel housing
• High accuracy ±0.2% F.S.
• Various functions : User input range, display scale, output scale, digital filter, multi display
  selection, abnormal operation display, TUF (Two Unit Function), etc.

CE UK EAC

Temperature Sensors / Transmitters

THD Series

Temperature / Humidity Transducers

• Compact design
• Built-in temperature, humidity sensor
• Available in room type, duct mount type, and wall mount type
• 7-segment LED Display (THD-DD / THD-WD)
• Various output options : DC 4-20mA, 1-5VDC, RS485 communication (Modbus RTU)

CE UK KS EAC

KT-502H Series

Temperature Transmitters with HART Protocol

• HART protocol
• Display rotation in 330° range
• Better visibility with supporting backlight function
• Various inputs (to order, select one from 22 kinds)
• Explosion-proof specification : Ex D IIC T6

CE UK KS EAC

CN-502H Series

Cylindrical Temperature Transmitters with HART Protocol

• HART protocol
• Multi-input (to order, select one from 22 kinds)
• Small size (Ø44 x H 24 mm)
• High accuracy ±0.3% F.S.

CE UK

CONTROLLERS

Controllers are widely used in industrial control systems to adjust or maintain desired outputs of specific processes within a desired range.

- Temperature Controllers
- Counters
- Timers
- Digital Panel Meters
- Recorders
- Digital Display Units
- Sensor Controllers
- HMIs / Industrial PC

Temperature Controllers

TN Series

2-DOF PID Temperature Controllers (Program / Fixed Control)

- 2-DOF PID algorithm optimized for various control applications
- 50 ms high-speed sampling rate and ±0.2% display accuracy
- Program control and fixed control models available
- Simultaneous heating / cooling and automatic / manual control function
- Control functions : Group PID, Zone PID, Anti Reset Windup (ARW)

TH4M Series

LCD Temperature / Humidity Controllers

- Simultaneous temperature and humidity control
- Large LCD display with easy-to-read PV characters
- Temperature and humidity input correction function
- Output delay time setting
- Dedicated temperature / humidity sensor THD-RM series (included)

TMH Series

Modular Multi-Channel High Performance Temperature Controllers

- Multi-channel (2-channel / 4-channel) input and output control
- Various option modules : Analog input / output option modules, digital input / alarm output option modules, CT input option modules, communication modules
- Easy maintenance with detachable body and base terminal
- Power supply and communication with expansion connectors (up to 32 units)
- Parameter configuration with PCs (DAQMaster software)

TM Series

Modular Multi-Channel PID Temperature Controllers

- Multi-channel (4-channel : TM4 / 2-channel : TM2) input and output control
- Module connection and expansion with expansion connectors (up to 31 units)
- High-speed sampling cycle (4-channel : 100 ms / 2-channel : 50 ms)
- Simultaneous heating and cooling control function
- Parameter configuration via PC (DAQMaster software)
- Switch between relay, current, SSR drive output

TR1D Series

Slim Single Display PID Temperature Controllers

- Compact, space-saving design with 22.5 mm width size
- 50 ms high-speed sampling and ±0.3% display accuracy
- Simultaneous heating and cooling control function
- Switch between relay, current, SSR drive output
- Heater disconnect alarm function (CT input) - Current transformer (CT) sold separately

TK Series

High Performance PID Temperature Controllers

• 50 ms high-speed sampling rate and ±0.3% display accuracy
• High luminance LED display with large PV and SV characters
• Simultaneous heating and cooling control function
• Automatic / manual control option
• Switch between relay, current, SSR drive output

CE UK CA c⊕us EHC

TX Series

LCD Display PID Temperature Controllers

• 50 ms high-speed sampling rate and ±0.3% display accuracy
• Large LCD display with easy-to-read white PV characters
• SSR drive output (SSRP function) control options : ON / OFF control, cycle control, phase control
• Compact, space-saving design with 45mm depth
• Switch between relay, current, SSR drive output

CE UK CA c⊕us KC EHC

TC / TCN Series

Economical Single / Dual Display PID Temperature Controllers

• 100 ms high-speed sampling rate and ±0.5% display accuracy
• Single digital display (TC) and dual digital display (TCN) PID temperature controllers
• SSR drive output (SSRP function) control options : ON / OFF control, cycle control, phase control
• Compact design with large display panels for easier reading
• Switch between relay output and SSR drive output

CE UK CA c⊕us EHC

TA Series

Analog Non-Indicating Type PID Temperature Controllers

• 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

CE UK CA c⊕us EHC

T3 / T4 Series

Thumbwheel Switch Digital Temperature Controllers

• Various control output options : relay, SSR drive, current
• 2 independent set points and control outputs for heating and cooling control (T4LP)
• Available in various sizes (W 48 × H 48, W 48 × H 96, W 72 × H 72, W 96 × H 96 mm)
• Indicator Type provided

EHC

TF3 Series

High Performance Refrigeration Temperature Controllers

• Standard installation size for refrigeration panels (W 70.3 mm 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

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TC3YF Series

Refrigeration Temperature Controllers

• 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 available for optimal cooling control

c⊕us KC EHC

KPN Series

Bar Graph Temperature Controllers

• High speed sampling of 50ms and ±0.3% display accuracy
• Enable to check control output operation amount by adopting bar graph
• Simultaneous heating / cooling control and automatic / manual control for high performance control
• Selection function of current output or SSR drive output
• Parameter setting available via PC (USB and RS485 communication)
  - Free device comprehensive management program (DAQMaster)

CE UK CA EHC

KN-1000B Series

Bar Graph Indicators

• High accuracy with 16 bit ADC (±0.2% F.S.)
• Multi-input types (Thermometer 12 types, RTD 5 types, Analog 6 types)
• 101 LED bar graph (green)
• Various output options
  - Alarm output : 2 points / 4 points
  - 4-20mA transmission output (isolated), RS485 communication output

CE UK CA EHC

KN-2000W Series

1-channel Digital Indicators

• High accuracy with 16 bit ADC (±0.2% F.S.)
• Max. display range : -19999 to 19999
• Multi-input types (Thermometer 12 types, RTD 5 types, Analog 8 types)
• Auto display color change function : Selectable indicator colors when error occurs or alarm operates
• Various output options (Alarm output, 4-20mA transmission output, RS485 communication output)

CE UK CA EHC

Counters

CT Series

Programmable Digital Counter/Timers

• Integrated counter / timer unit for counting and timing requirements
• RS485 (Modbus RTU) communication (models available)
• One-shot output time : 0.01s to 99.99s
• Various input / output modes : counter (9 input modes, 11 output modes), timer (11 output modes)

CX Series

LCD Display Counter/Timers

• LCD display with easy-to-read white PV characters
• Input type : voltage input (PNP) / no-voltage input (NPN) selectable (through parameter setting), universal voltage input type available
• One-shot output time : 0.01 to 99.99 seconds (in 0.01 second increments)
• Various output modes : counter (11 input modes, 11 output modes), timer (15 output modes)

CM6M Series

30-Channel Counters

• Max. counting speed : 20 cps
• Compact rear-length size (64.5 mm)
• Count up to 30 channels (individual output indicators for each channel)
• 6-digit display (0 to 999999 range)
• Front panel button lock function

FX Series

Standard Digital Counter / Timers

• Counting speeds : 1 cps / 30 cps / 2 kcps / 5 kcps
• Switch between counter and timer operation using DIP switch
• Indicator type provided
• Counter : 20 input modes, 18 output modes
• Timer : Various output modes (16 output modes)

LA8N Series

Compact 8-Digit LCD Backlight Counters

• Compact size : DIN W 48 × H 24 × L 54 mm
• LCD display with 8.7 mm character size
• Backlight models available
• Operation modes : count-up, count-down
• Decimal point setting function

Timers

LE7M-2 Series

Digital Week / Year Timers

• Various external input functions
• Backlight display with high visibility
• Simple configuration and status monitoring
• Time configuration and control in week or year units
• Daylight savings time function

LE8N Series

Compact 8-Digit LCD Digital Timers

• Compact size : DIN W 48 mm x H 24 mm x L 54 mm
• LCD display with 8.7 mm character size
• Backlight models available
• Various time setting ranges
• Input signal types : no-voltage input, voltage input, AC / DC universal voltage input

LE4S Series

LCD Display Digital Timers

• Mounting space saving with compact design
• Available to set each value and time range separately when choosing Flicker (FK, FK I) or ON-OFF Delay (ON OFF D, ON OFF D I) output mode
• Adds Flicker 1 mode (LE4SA)
• Settable One-shot output time (0.01 to 99.99 sec) (existing model : fixed 0.5 sec)

FSE Series

8-Pin Plug Type Digital Timers

• Wide time setting range : 0.01s to 9999.9h
• Switch between voltage input (PNP) and no-voltage input (PNP) using DIP switch
• Set hr / min / sec display with RESET key
• 8-pin plug type connection
• 10 year memory protection (using non-volatile semiconductor)

ATM Series

Miniature Analog Timers

• Ultra-compact, miniature size : W 21.5 mm x H 28 mm x L 59.3 mm
• 4PDT contacts (250VAC, 3A)
• Highly accurate timing control
• Simple time setting with analog dial
• Various time ranges : 0.1s to 3h (11 available options, by model)

ATN Series

Multi-Function Analog Timers

• 6 output operations
• 16 time setting ranges
• Wide time setting range : 0.05s to 100h
• Simple time setting, time range, and output operation configuration with analog dial and switches
• LED operation indicator and output indicator

CE UK CA c**RU**us EAC

ATS Series

Compact Multi-Function Analog Timers

• 6 output operation modes
• 12 time setting ranges
• Wide time setting range : 0.1s to 30h
• Adjacent installation and DIN rail mounting possible with PS-M8 (W 41 mm) sockets
• Only for 8-pin ATS models

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ATE8 Series

Simple Operation Analog Timers

• Simple configuration and operation with analog dial
• Various time setting ranges
• Standard DIN W 48 mm x H 48 mm
• Power supply : 100-240VAC 50 / 60Hz, 24-240VDC

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Digital Panel Meters

MT4Y / MT4W / MT4N Series

Digital Panel Meters with Diverse Input / Output Options

• Available in various sizes
• Various input / output options (by model)
• Maximum allowed input : 500VDC, DC 5A, 500VAC, AC 5A
• Display range : -1999 to 9999
• High / low-limit display scale function

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MX4W Series

LCD Display Multi Panel Meter

• Compact, space-saving design (rear-length : 20 mm)
• LCD display with easy-to-read white PV characters
• Isolated input and power modules : powering of multiple units using a single power supply
• Various input options (by model)
  - Input options : DC / AC voltage, DC / AC current

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M4NN Series

Compact Digital Panel Meters with Diverse Input Options

• Various input / output options (by model)
  - Input options : DC voltage, DC current, AC voltage, AC current
  - Output options : NPN open collector / PNP open collector (default : indicator / no output)
• Isolated input and power modules: powering of multiple units using a single power supply
• Display range : -1999 to 9999

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M4N Series

Compact Digital Panel Meters

• Compact size : DIN W 48 mm x H 24 mm
• Input options (by model) : DC voltage, DC current
• Auto-zero adjustment and hold display value function
• Max display value : 1999
• 7-segment LED display

EAC

M4M / M4W / M4Y / M5W Series

Digital Panel Meters

• Thumbwheel switch type : M4M / M4W, Indicator type : M4Y / M5W
• Voltmeter, Scaling, Ammeter, Wattmeter, Tachometer
• Max display value : 1999 (all other models), 19999 (M5W)
• DIN standard size models
• Output options : indicator only, single setting output, dual setting output

EAC

M4NS / M4YS Series

Loop-Powered Digital Scaling Meters

• Loop-powered : power supplied by loop current
• Measured input : DC 4-20mA
• Display range : -1999 to 9999
• High / low-limit display scale function
• Decimal point setting function

EAC

M4V Series

Digital Panel Meters for Mosaic Panels

• Various input options : 0-2VDC, 0-10VDC, 1-5VDC, DC 0-1mA, DC 4-20mA
• High / low-limit display scale function
• Display range : -999 to 9999
• Display accuracy : F.S ±2%rdg ±1dgt
• Error display function

EAC

LR5N-B Series

Compact Digital Pulse Meters

• 1-pulse input per revolution
• Display up to 10,000 RPM
• Built-in internal battery (power supply not required)
• Display RPM or RPS of rotating shaft or disc
• AC voltage frequency display function

CE EAC

MP5M Series

High Performance Digital Pulse Meters

• 14 operation modes
• Various output options : Relay single (high-limit) / relay double (high / low-limit) output+NPN
  open collector output
• Various functions : Prescale, monitoring delay, hysteresis, auto-zero, parameter lock function
• NPN input (non-contact / contact) or PNP input (non-contact / contact)

CE UK CA cᴿᵁus EAC

MP5S / MP5Y / MP5W Series

High Performance Digital Pulse Meters

• 16 operation modes
• Various output options : Relay triple / quintuple output, NPN / PNP open collector quintuple output
• Various functions : Prescale, monitoring delay, hysteresis, auto-zero, parameter lock function
• NPN input (non-contact / contact) or PNP input (non-contact / contact)

CE UK CA cᴿᵁus EAC

Recorders

KRN1000 Series

LCD Touchscreen Paperless Recorders

• 5.6-inch TFT color LCD touchscreen display : 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 3600s recording cycle

CE UK CA ℅ EAC ●

KRN100 Series

100 mm Hybrid Recorders

• 100 mm paper recorder
• Writable data logger function without paper (internal memory and external USB memory
  data backup)
• 25 to 250 ms high speed sampling, 10 to 240 mm / H high graph mode recording
• 6 kinds of recording color
• Easy parameter setting with quick menu

CE UK CA ℅ EAC ●

KRN50 Series

50 mm Compact Hybrid Recorders

• 50 mm thermal transfer method of paper recorder
• Data logger function for recording without paper
• 2-channel simultaneous recording
  - graphic mode, digital mode
• RS485 communication and dedicated communication port to set or monitor parameters in
  real-time by PC / PLC

CE UK CA EAC

Digital Display Units

DS / DA Series

Intelligent Type Digital Display Units

- Simple wiring without soldering
- Various input options : Serial input, parallel input, 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

CE UK EAC

D1AA Series

Small 16-Segment Digital Display Units

- Display 61 unique characters (0 to 9, A to Z, 24 symbols, period)
- Input logic : positive (PNP), negative (NPN)
- Data input method : parallel, serial
- Input signal voltage : high (4.5-24VDC), low (0-1.2VDC)
- 16-segment LED display (D1AA-RN : red / D1AA-GN : green)

EAC

D1SA Series

Small 7-Segment Digital Display Units

- Display characters : decimal (0 to 9), hexadecimal (0 to 9, A to F)
- Input logic : positive (PNP), negative (NPN)
- Data input method : parallel, serial
- Input signal voltage : high (4.5-24VDC), low (0-1.2VDC)
- 7-segment LED display (D1SA-RN : red / D1SA-GN : green)

EAC

D1SC-N Series

Large 7-Segment Digital Display Units

- Display characters : decimal (0 to 9), hexadecimal (0 to 9, A to F)
- Input logic : positive (PNP), negative (NPN)
- Data input method : parallel, serial
- Input signal voltage : high (4.5-24VDC), low (0-1.2VDC)
- 7-segment LED display (red)

EAC

D5Y / D5W Series

Panel Mount 5-Digit Digital Display Units

- Various data input methods: Static / Dynamic parallel, 4 / 5-bit serial, 16 / 20 / 25-bit serial input
- Decimal point and minus sign display function
- Input logic : positive (PNP), negative (NPN)
- Switch between 4-digit (-9999 to 9999) and 5-digit (0 to 99999) display
- Zero blanking function

EAC

Sensor Controllers

PA10 Series

High Performance Sensor Controllers

- High-speed output response
- DIN rail or panel mount installation
- Various models
  - PA10-V, PA10-W, PA10-U
- Wide range power supply : 100-240VAC, 50 / 60Hz

EAC

PA-12 Series

8-Pin Plug Type Sensor Controllers

- 110 / 220VAC dual voltage
- NPN/PNP input switch
- High contact capacity (250VAC, 3A resistive load)
- Socket plug-in type (8-pin)
- N.O. or N.C. relay output available

EAC

HMIs / Industrial PC

LP Series

Color LCD Logic Panels

• Various sizes (7, 10.4-inch), TFT LCD True Color display
• Horizontal / vertical installation
• All-in-one device including functions of PLC, HMI, and I/O modules
• Various communication interface support : RS232C, RS422 / 485, Ethernet, CAN
• 16, 32 input and 16, 32 output points provided
• Device monitoring of connected device possible without screen data

CE UK CA KC EAC

GP Series

Color LCD Graphic Panels

• Various sizes (4.6, 5.7, 7, 10.4-inch), TFT LCD True Color display
• Horizontal / vertical installation
• Device monitoring of connected device possible without screen data
• atDesigner screen editor software provided
  - Various support functions, extensive image and object library

CE UK CA KC EAC

APC Series

10.1-Inch Panel PC

• Microsoft Windows 10 included
• Quad-core processor
• Fanless PC with silent operation and low heating
• 10.1 inch IPS TFT LCD with true color display (16,777,216 colors)
• Resistive touchscreen allows operation with gloved fingers, pens, or any stylus-types

CE KC EAC

POWER ELECTRONICS

Power electronics, including switching mode power supplies, solid state relays, and power controllers, help maintain stable and efficient power supply.

• Switching Mode Power Supplies
• Solid State Relays
• Power Controllers

Switching Mode Power Supplies

SPB-A Series

DIN Rail Switching Mode Power Supplies

• Various lineups for diverse applications (15 W~480 W)
• Compact size for maximum space efficiency
• High conversion efficiency with PFC circuit (120 W, 240 W, 480 W)
• Outstanding environmental resistance : overcurrent / overvoltage protection and overheating prevention, wide temperature range
• Low output voltage indicator (red LED), output indicator (green LED)

SPA Series

Panel Mount Switching Mode Power Supplies

• Stable power supply with minimal noise and ripple
• Built-in overcurrent protection circuit, output short-circuit protection circuit, overheat protection circuit, and overvoltage protection circuits
• Output voltage : 5VDC, 12VDC, 24VDC
• Output power : 30 W, 50 W, 75 W, 100 W, 400 W

Solid State Relays

SRH1 Series

Single-Phase Solid State Relays (Integrated Heatsink, Top / Bottom Terminal Type)

• High heat dissipation efficiency with ceramic PCB
• DIN rail mount or panel mount installation
• Voltage input type, current input type
• Input indicator (green LED)

CE UK CA c**UL**us EAC

SRHL1 Series

Single-Phase Solid State Relays (Integrated Heatsink, Left / Right Terminal Type)

• Rated input voltage : 10-30VDC, 90-240VAC
• Rated load voltage : 24-240VAC, 48-480VAC
• Rated load current : 10A, 15A, 20A, 25A, 40A
• Zero cross turn-on, random turn-on models available
• Input indicator (green LED)

CE c**UL**us EAC

SR1 Series

Single-Phase Solid State Relays (Detachable Heatsink Type)

• Compact, universal design for flexible installation
• High heat dissipation efficiency with ceramic PCB
• Zero cross turn-on, random turn-on models available
• Input indicator (green LED)

CE UK CA c**UL**us EAC

SRC1 Series

Single-Phase Solid State Relays (Slim, Detachable Heatsink Type)

• Slim, compact size (22.5 mm width)
• High heat dissipation efficiency with ceramic PCB
• Zero cross turn-on, random turn-on models available
• Input indicator (green LED)

CE UK CA c**UL**us EAC

SRS1 Series

Single-Phase Solid State Relays (Socket Type)

• Various socket types for easier installation and maintenance
• Various rated input voltage, rated load voltage, rated load current
• Dielectric strength : 2500VAC
• Zero cross turn-on, random turn-on models available
• Input indicator (red LED)

CE UK CA c**UL**us EAC

SR3 Series

Three-Phase Solid State Relays (Detachable Heatsink Type)

• Two mounting hole types and sizes
• Alarm function (overheating) : Alarm output indicator (red LED), disconnect standard output, alarm output
• High dielectric strength : 4000VAC (select models)
• Various rated input voltage, rated load voltage, rated load current
• High heat dissipation efficiency with ceramic PCB and integrated heatsink

CE c**UL**us EAC

SRH3 Series

Three-Phase Solid State Relays (Integrated Heatsink Type)

• Two mounting hole types and sizes
• Alarm function (overheating) : Alarm output indicator (red LED), disconnect standard output, alarm output
• High dielectric strength : 4000VAC (select models)
• Various rated input voltage, rated load voltage, rated load current
• High heat dissipation efficiency with ceramic PCB and integrated heatsink
• Various mounting methods (DIN rail, panel)

CE c**UL**us EAC

Power Controllers

SPRM Series

Multi-channel Power Controllers

• Single-phase control or three-phase control selectable
• Wide voltage range : 220 to 440VAC
• Various rated current models : 25A, 40A, 55A, 70A, 90A, 110A, 160A
• Monitoring load current, voltage, output, resistance, heatsink temperature, power
• Various alarm functions and history save option

CE UK CA c(UL)us LISTED K

SPR1 / 3 Series

Slim Single / Three-Phase Power Controllers with LED Display

• Slim Single (SPR1) / Three-Phase (SPR3) Power Controllers
• Slim and elegant design
• LED display allows real-time monitoring of control input, load voltage, load current, load power, load resistance, and heat-sink temperature
• Stable control with feedback control (constant current, constant voltage, constant power)

CE UK CA

DPU Series

Digital Thyristor Power Controllers

• High speed and high accuracy by digital control using high speed CPU
• Various controls : Phase, feedback, zero crossing cycle, zero crossing ON / OFF control
• Improved maintainability with built-in fast-acting fuse and easy fuse replacement
• Communication output model : RS485 (Modbus RTU)
• Various control inputs, DI inputs and alarm output

CE UK CA c(UL)us EHC

SPC1 Series

Single-Phase Power Controllers

• Various input specification : DC4-20mA, 1-5VDC, External 24VDC, External adjuster, External contact
• Various function : out ADJ (output limit) function, soft start function (except for ON / OFF control type)
• Various control type by mode switches : phase control type, cycle control type (zero cross turn-on), ON / OFF control type (zero cross turn-on)

EHC

G MOTION DEVICES

Motion devices are used to convert electrical energy into mechanical energy acting as actuators in automation processes.

· Closed Loop Stepper Motor System
· Stepper Motor Drivers
· 5-Phase Stepper Motors
· Motion Controllers

Closed Loop Stepper Motor System

AiC Series

2-Phase Closed Loop Stepper Motor System with Integrated Controller

· Closed loop system for precise real-time position control
· High speed and high torque drive without missed steps
· Control up to 31 axes with RS-485 communication, 42 axes with CC-Link communication
· Built-in brake type motors, built-in gear / rotary actuator type motors available
· Various communication control (CC-Link, EtherCAT, Modbus TCP)
※ Certifications may vary by model.

CE UK KS EAC

AiCA Series

AC Power 2-Phase Closed Loop Stepper Motor System with Integrated Controllers

· Closed loop system for precise real-time position control
· High speed and high torque drive without missed steps
· Control up to 31 axes with RS-485 communication
· EtherCAT Communication Control (AiCA-EC)
· Built-in brake type motors, built-in gear / rotary actuator type motors available
※ Certifications may vary by model.

CE UK KS

AiS Series

2-Phase Closed Loop Stepper Motor System

· Closed loop system for precise real-time position control
· High speed and high torque drive without missed steps
· Easy operation setting with external adjuster (Gain, speed filter, in-position, resolution)
· Built-in brake type motors, built-in gear / rotary actuator type motors available

CE UK KS EAC

AiSA Series

AC Power 2-Phase Closed Loop Stepper Motor System

· Closed loop system for precise real-time position control
· High speed and high torque drive without missed steps
· Supports 200-240VAC AC power supply
· Easy operation setting with external adjuster (Gain, speed filter, in-position, resolution)
· Built-in brake type motors, built-in gear / rotary actuator type motors available

CE UK KS EAC

Stepper Motor Drivers

MD2 Series

2-Phase Stepper Motor Drivers

• Unipolar constant current drive method
• STOP current setting provides holding torque (brake function)
• Low vibration operation with microstepping drive (MD2U-MD20)
• Isolated photocoupler input design minimizes influence from electrical noise
• Power supply : 24-35VDC

CE UK EAC

MD5 Series

5-Phase Stepper Motor Drivers

• Bipolar constant current pentagon drive method
• Various built-in functions including auto current down and self-diagnosis
• Microstepping drive allows low-speed rotation and extreme precision control
• Isolated photocoupler input design minimizes influence from electrical noise

CE UK cRUus EAC

5-Phase Stepper Motors

AK(B) Series

5-Phase Stepper Motors (Shaft Type / Built-in Brake Type)

• Compact and lightweight with high speed, high accuracy, and high torque
• Space-saving design ideal for building compact-sized systems
• Low, economical prices for improved cost efficiency
• Built-in brakes (AK-B Series)
• Frame sizes : AK - 24 mm, 42 mm, 60 mm, 85 mm, AK-B - 42 mm, 60 mm, 85 mm

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AHK Series

5-Phase Stepper Motors (Hollow Shaft Type)

• Compact and lightweight design with high accuracy, speed, and torque
• Connect ball-screws or TM-screws directly without couplings
• No resonance (vibration, noise) caused by couplings
• Space-saving design ideal for building compact-sized systems
• Low, economical prices for improved cost efficiency
• Frame sizes : 42 mm, 60 mm, 85 mm

CE EAC

AK-G(B) Series

Geared 5-Phase Stepper Motors (Shaft Type / Built-in Brake Type)

• Compact, space-saving design ideal for building compact-sized systems
• Low, economical prices for improved cost efficiency
• Backlash (frame size) - 42 mm : ±35′ (0.58°), 60 mm : ±20′ (0.33°), 85 mm : ±15′ (0.25°)
• Built-in brakes (AK-GB Series)
• Brake is released when 24VDC is applied to brake wire (AK-GB)

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AK-R(B) Series

5-Phase Stepper Motors (Rotary Actuator Type / Built-in Brake Type)

• Compact, space-saving design ideal for building compact-sized systems
• Low, economical prices for improved cost efficiency
• Backlash (frame size) : 60 mm : ±20′ (0.33°)
• Built-in brakes (AK-RB Series)
• Brake is released when 24VDC is applied to brake wire (AK-RB)

CE UK EAC

Motion Controllers

PMC-1HS / 2HS Series

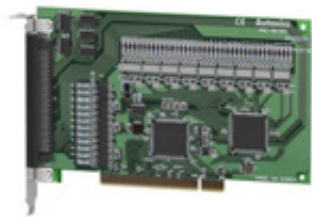**1-Axis / 2-Axis High-Speed Programmable Motion Controllers**

• High-speed processing up to 4 Mpps
• 4 operation modes : scan, continuous, index, program
• 12 control commands and up to 64 steps of programming per axis
• Parallel interface input / output terminal to communicate with various PLCs
• Operation programming, parameter configuration and editing with dedicated software

CE UK CA c $\mathbf{\Re}$ us

PMC-2HSP Series

2-Axis Interpolation Type Motion Controllers

• High-speed independent 2-axis control with processing speed up to 4 Mpps
• Supports linear and circular interpolation control
• 17 control commands and up to 200 steps of operation programming
• Supports various control interfaces (USB, RS232C, RS485, Parallel I/O)
• Multiple control of up to 32-axes (16 units) with RS485 communication (Modbus RTU)

CE UK CA KS EAC

PMC-4B-PCI Series

4-Axis PC-PCI Card Programmable Motion Controllers

• Independent 4-axis control of AC servo motors and stepper motors
• Supports Windows 98, NT, 2000, XP, Windows 7
• Auto home search function and synchronous operation
• Interpolation control for circular, linear, bit pattern, continuous, acceleration,
  and deceleration drives
• 2-axis / 3-axis constant linear velocity

CE UK CA KS EAC

INDUSTRIAL NETWORKING

Industrial networking devices allow communication between devices using various protocols such as Ethernet, offering safe transmission of real-time data to control systems.

・Remote I/O System
・Network Converters / Signal Conditioners

Remote I/O System

ADIO Series

Remote I/O Boxes

・IO-Link Master type (ADIO-ILM), IO-Link HUB type (ADIO-HUB)
・Convenient Wiring with Daisy Chain Structure
・Zinc Die-cast Housing and IP67, IP69K Protection Rating
・Push-Pull Connector Type Available
・I/O port setting and status monitoring (cable short / disconnection, connection status, etc.)

ARIO Series

Slim Remote I/O

・Coupler : EtherCAT, CC-Link V1 / V2, ProfiNet, ProfiBus, EtherNet/IP, DeviceNet, Mobus TCP compatible, Modbus RTU compatible
・Module : various input / output modules, power module
  : Remote bus I/O power, digital input / output (4 / 8 / 16 channels), analog input / output (2 / 4 channels), temperature input (4 channels)
  : Expandable up to 64 modules (may vary by communication type)

ARD Series

DeviceNet Analog / Digital Remote I/O

・DeviceNet analog (ARD-A) / digital (ARD-D) remote I/O
・Additional expansion
  - Expand up to 63 base units per master unit (ARD-A)
  - Connect up to 3 expansion unit (terminal block type), 7 expansion unit (sensor connector type) (ARD-D)
※ Certifications may vary by model.

ARM Series

Modbus RTU Digital Remote I/O (Sensor Connector Type)

・Modbus RTU protocol digital remote I/O
・Input and output expansion for PCs, PLCs, and Autonics logic panels (LP)
・Compatible with e-CON sensor connectors for easy wiring and connection
・Additional expansion
・Various functions and real-time monitoring

Network Converters / Signal Conditioners

SCM Series

Communication Converters

- SCM-WF48 : Wireless Communication Converters for RS485 / USB to Wi-Fi
- SCM-US48I : USB-RS485 Communication Converters
- SCM-38I : RS232C-RS485 Communication Converters
- SCM-US / SCM-USP / SCM-SFL : USB-Serial Communication Converters
- SCM-USU2I : 2-Channel USB Temperature Data Loggers

CE UK $\mathbb{K}$ EAC

CN-6000 Series

Isolated Signal Conditioners

- Multi-input, Various outputs
- Improved visibility with negative LCD : 2 segment, 3 colors (selectable red, green, yellow)
- Displays input type and unit on display part
- Various functions
  - High / Low peak input monitoring
  - Alarm output (upper / lower, sensor break)

CE UK EAC

CONNECTIVITY

Connectivity devices are communication devices used to send and receive signals or data between the environment and information processing systems.

• I/O Terminal Blocks
• Cables / Connectors / Socket

I/O Terminal Blocks

ACS / ACL / ACR Series

Common Terminal Blocks

• Screw / screwless push-in / rising clamp type
• Common wiring on PCB, jumper bar not required
• Space-saving design
• DIN rail mount and screw mount installation

AFS / AFL / AFR Series

Interface Terminal Blocks

• Screw / screwless push-in / rising clamp type
• Ideal for PLCs and motion device I/O
• Space-saving design
• DIN rail mount and screw mount installation

AFE Series

Sensor Connector Terminal Blocks

• Sensor connector type
• Wire stripping and tools not required
• LED Operation status indicator
• DIN rail mount and screw mount installation
• Switch between NPN and PNP input with switch

ABS / ABL Series

Relay Terminal Blocks

• Screw / screwless push-in type
• Switch between independent and load common output with jumper bar
• Operation status indicator (blue LED)
• Convenient relay removal with ejector clip and release lever
• DIN rail mount and screw mount installation

ASS / ASL Series

Solid State Relay Terminal Blocks

• Screw / screwless push-in type
• Contactless relay suitable for systems requiring long life-cycle and high-speed response
• Operation status indicator (blue LED)
• Convenient SSR removal with ejector clip (except 1-point type)
※ Certifications may vary by model.

Cables / Connectors / Socket

PT Series

Sensor Distribution Boxes

• 4-pin / 5-pin M12 connector type
• 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)
• Waterproof cover (IP67 protection structure), protection cover (IP52 protection structure)

CE UK EAC

M8 / M12 / M17 / M23 Series

Connector cables

• M8 Connector type 4-pin models available
• M12 Connector type 4-pin / 5-pin / 8-pin / 12-pin models available
• M17 Connector type 6-pin / 9-pin / 13-pin models available
• M23 Connector type 12-pin / 19-pin models available
※ Certifications may vary by model.

EAC c(UL)us LISTED CE UK

CH / CO Series

I/O Terminal Block Cables

• Diverse cables available for connection to various PLCs and controllers
• Diverse cable lengths for various user requirements
• Customizable cable arrangement
• Customizable branching cable types

UL EAC

D-sub Series

D-Sub Connector Communication Cables

• D-Sub 9-pin Connector type available
• Available in various wire connection

M12 Series

M12 Connector Communication Cable

• M12 Connector type 8-pin model available
• Various cable length (2 m, 5 m, 10 m)
• Available in I-type connector, L-type connector type
• Standard and moving type cables available
• IP67 protection structure (IEC standard)

c(UL)us LISTED EAC

CV Series

Valve Plug Cables

• DIN 43650 Type A, Type C connector available
• Various cable length (1 m, 2 m, 5 m, 10 m)
• Available in I-type connector, L-type connector, cable type
• Operation indicator (green LED)
• IP67 protection structure (IEC standard)

CNE Series

Sensor Connectors

• Significantly reduce installation work and time
• Wide range of connectors compatible with diverse cables and wires
• High density connection with contact pitch of 2 mm
• Compatible with e-CON connectors
• 3A current capacity for each pin

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PS / PG Series

8-Pin / 11-Pin Controller Sockets

• Excellent heat resistance
• Copper alloy contacts for excellent electrical conductivity and high durability
• Isolated contacts (PG)
• Easy one-touch mount installation (PS)

c(UL)us EAC

CONTROL SWITCHES

Extensive range of control switches are available including push buttons, selector switches, emergency switches, pilot lights, buzzers, and more.

• Control Switches

Control Switches

S16PR / S2PR / SQ3PFS / S3PF / S3PR Series

Push Button Switches

• Ø16 / 22 / 25 / 30, □30
• Smooth operation
• High electrical conductivity
• Long-lasting durability

S16SR / S2SR / S3SF Series

Selector Switches

• Ø16 / 22 / 25 / 30
• Smooth operation
• High electrical conductivity
• Long-lasting durability

S16KR / S2KR / S3KF Series

Key Selector Switches

• Ø16 / 22 / 25 / 30
• Smooth operation
• High electrical conductivity
• Long-lasting durability

S2TR Series

Double Push Button Switches

• Smooth operation
• High electrical conductivity
• Long-lasting durability

S16BR / S2BR Series

Mushroom-Head Push Button Switches

• Ø16 / 22 / 25
• Smooth operation
• High electrical conductivity
• Long-lasting durability

S16ER / S2ER Series

Emergency Switches

• Ø16 / 22 / 25
• Smooth operation
• High electrical conductivity
※ Certifications may vary by model.

CE c**RU**us IC EAC

L16RR / L2RR / LQ3RF / L3RF Series

Pilot Lights

• Ø16 / 22 / 25 / 30, □30
• Smooth operation
• High luminance LED
• Available in various colors

CE c**RU**us IC EAC

MN Series

Magnetic Non-Contact Switches

• Non-powered magnetic detection method
• Two wiring specifications of cable / cable connector type
• Available to install at back-forth / right-left moving door
• IP67 protection structure (IEC standard)

CE UK CA c**UL**us LISTED EAC

B7VA / B2NB / B2PB / B6MA

Buzzers

• Magnetic Buzzers (B2NB) : Clear and loud sound : up to 87 ±10 dB (at 0.1m)
• Piezo Buzzers (B2PB) : Red or green LED flashing when buzzer is operating
• Melody Buzzers (B6MA) : 4 different melodies (ambulance, police siren, phone ring, Für Elise)
• Voice Buzzers (B7VA)
  : 8 different alarms (custom voice or melody available in external memory type model)

CE UK CA EAC

SOFTWARE

Autonics software allows users to configure parameters, monitor status, program control processes with various Autonics devices.

• Software

Software

DAQMaster

Comprehensive Device Management Software

• Multiple device support
• Scan for devices
• Simple graphic user interface
• Project management
• Data analysis using grids or graphs

atVision / Vision Master

Vision Software for VC / VG Series

• Various inspection functions: alignment, brightness, contrast, area, edge, shape, length, angle, diameter, object counting, (barcode, OCR, OCV, patterns for VC series)
• Set up to 32 or 64 separate workgroups (multiple inspection points per workgroup)
• Workgroup management and parameter setting
• Send saved image data to FTP servers

atIOLink

IO-Link Software

• IO-Link master port
  - Easily monitor connected devices and set port operation modes and functions
• IO-Link device parameter setting and IO-Link device real-time monitoring
  - Input / output process data of IO-Link devices can be monitored in real time
• IO-Link device maintenance

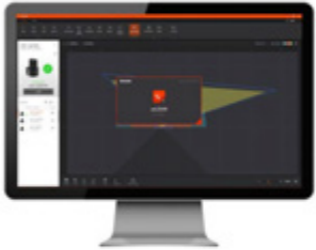### atLightCurtain

Safety Light Curtain Software

• Intuitive graphic user interface
• Light curtain operation status monitoring
  - Monitor amount of light received
  - Monitor connection and switches
  - Monitor errors and warnings
• Supports safe distance calculation function

atLiDAR

Laser Scanner Software

• Convenient user interface
• Parameter management
• Data log monitoring
• Data analysis
• Multi-language support

atDisplacement

Laser Displacement Sensors Software

• Dedicated software for use with BD-C series
  : Graphic user interface, parameter settings and data monitoring of BD amplifier units
• Check profiles of connected devices through status window
• Monitor real-time data, graph, and wave patter graphs

atDistance

Distance Measurement Software

• Dedicated software for UTR series ultrasonic sensors to monitor status in real-time
• Intuitive graphic user interface
• Various detection functions
  : Various parameter configuration including output method switch, digital output operation
    mode switch, output mode switch and filter setting, and hysteresis setting
• Check previous data with saved logs

atMotion

Motion Control Software

• Supports Multiple Devices
  - Monitor operation status of multiple devices and set parameters for each device
  - When multiple units with different addresses are connected, the address scan function provides
• Simple Graphic User Interface
  - Freely edit screen data to set parameters, monitor devices, and program control
  - Monitor operation status and history using DAQ Space (Line Graph, Grid)
• Multilingual Support

atLogic

HMI Logic Programming Software for LP Series

• Supports multiple projects
  - Open up to 5 projects to create or edit programs simultaneously
• Convenient program editing
• Various monitoring functions
  - Variable monitoring, device monitoring, system device monitoring, etc.
• Convenient user interface
• Real-time switching between ladder and mnemonic program

atDesigner

HMI Screen Editor Software for LP / GP-A Series

• Convenient user interface
• Supports Windows TrueType fonts and various bitmap fonts
• GP / LP hardware firmware upgrades
• Project conversion feature
  - Easily convert LP / GP-S series projects to LP / GP-A series projects
• Diverse image library provided

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Products

Sensors, Controllers, Motion Devices, Safety, Measuring Equipment, Connection Equipment and more

• Photoelectric Sensors • Photomicro Sensors • Fiber Optic Sensors • Displacement Sensors • LiDAR • Ultrasonic Sensors • Door Sensors
• Area Sensors • Proximity Sensors • Linear Positioning Sensors • Rotary Encoders • Temperature Sensors • Temperature Transmitters
• Pressure Sensors • Pressure Transmitters • Smart Camera • Vision Sensors • Safety Light Curtains • Safety Door Switches • Safety Switches
• Safety Controllers • Safety I/O Terminal Blocks • Temperature Controllers • Solid State Relays • Power Controllers • Counters • Timers
• Digital Panel Meters • Digital Display Units • Sensor Controllers • SMPS • Industrial PC • HMIs • Recorders • Indicators • Network Converters
• Closed Loop Stepper Motor System • 5-Phase Stepper Motor & Drivers • 2-Phase Stepper Motor Drivers • Motion Controllers
• Industrial Networking • I/O Terminal Blocks • Distribution Boxes • Cables • Control Switches / Pilot Lights / Buzzers • Software

**PRODUCT
GUIDE**