

Industrial Automation Guide 2016



Industrial Products & Systems

industrial.omron.eu

Targeted Technologies

Creating maximum output with minimum input

By identifying the many ways of innovation in specific industries we developed the 'targeted technologies' concept. It's a way of thinking about technology in a prioritized format. Prioritized according to our customers' most pressing needs. The result? A set of solutions that make immediate impact on the core of our customers' businesses. A set of solutions that hit the target every time. Take a look at the examples on our website.

industrial.omron.eu/technologies



PROplus Line

If you have a complex application or one where you need to address special needs, then the PROplus Line is the answer. That's because PROplus is a product line that is designed to meet a wide range of needs. It's a product line that is designed to meet a wide range of needs. It's a product line that is designed to meet a wide range of needs.

The PROplus Line is a product line that is designed to meet a wide range of needs. It's a product line that is designed to meet a wide range of needs. It's a product line that is designed to meet a wide range of needs.

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The 361° Approach

At Omron, we asked ourselves these questions too. And by identifying the answers in specific industries we developed the 'targeted technologies' concept. It's a way of thinking about technology in a prioritized format. Prioritized according to our customers' most pressing needs. The result? A set of solutions that make immediate impact on the core of our customers' businesses. A set of solutions that hit the target every time. Take a look at the examples below.

Technologies

Creating maximum output with minimum input

Whatever type of automated machinery you are specialized in, you know that there are many ways to innovate. You are already aware that there are many possible areas for improvement. But where do you start? Where do you focus your efforts? Where can you make the biggest difference with the least amount of effort?

At Omron, we asked ourselves these questions too. And by identifying the answers in specific industries we developed the 'targeted technologies' concept. It's a way of thinking about technology in a prioritized format. Prioritized according to our customers' most pressing needs. The result? A set of solutions that make immediate impact on the core of our customers' businesses. A set of solutions that hit the target every time. Take a look at the examples below.

Technologies

Sysmac: the all-in-one platform

We know that machine builders prefer different product solutions for different challenges. But this can cause hierarchy headaches and communications issues. That's why we developed Sysmac: a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

361°: the perfect match

When it comes to sensors and components, we know that our customers all have different needs. That's why our product development in this area is driven by the 361° Approach. It produces product families that offer a total all-round choice. From quality products suited to standard environments to specialist devices that can handle extremes. A full circle of choice, all with an extra degree of quality and proven reliability.

[Learn more](#)



The 361° portfolio

PRO Line
PROplus products are designed for specialty applications or customer demands.
[Learn more](#)



LITE Line
LITE sensors are the effective solution for general purpose applications.
[Learn more](#)



Product groups

Sysmac controller
The Sysmac controller is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Sysmac I/O
The Sysmac I/O is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Sensors
The Sysmac sensors are a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Relays
The Sysmac relays are a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Robotics
The Sysmac robotics are a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Visual inspection
The Sysmac visual inspection is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Positioning
The Sysmac positioning is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

Related product news



With new G2B sensors, you only pay for what you need
The new G2B sensors are a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

Related product news



ES1A - Omron's new photo sensors combine simplicity with performance
The ES1A photo sensors are a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

Related product news



RS-485 Control: New step towards the full integration of automation equipment
The RS-485 Control is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

Related product news



QAI (Q) for Machine Control
The QAI (Q) for Machine Control is a single unified platform that is open, scalable, flexible, and totally focused on maximizing the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

Welcome to our world

Our best-in-class devices for your automation system

Welcome to Omron's world of advanced industrial automation. The INDUSTRIAL AUTOMATION GUIDE is your essential tool to select best-in-class devices for your automation system. It highlights our core competences in sensing, control, visualisation, motion and panel components.

Of course, Omron offers a much larger range of products than you can find on the attached DVD. For more information on services and company competence visit our website.

Here you will find:

- Latest product news
- Technical product specifications
- 2D / 3D CAD Library
- Customer references
- Technology concepts
- Supporting product documentation
- Knowledge Base - "myOmron"
- Events Calendar
- Contact information

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“To the machine the work of the machine,
to man the thrill of further creation.”

Kazuma Tateisi, founder of Omron

Omron at a glance

200.000 products ranging
input, logic and output

Sensing, Control Systems, Visualization, Drives, Robots, Safety,
Quality Control & Inspection, Control and Switching Components

7%

Investment in Research & Development

Innovation track
record of 80 years

Top 150 global patent assignee

1.200 employees dedicated to R&D

11.000 + issued and pending patents

37.000

Employees worldwide

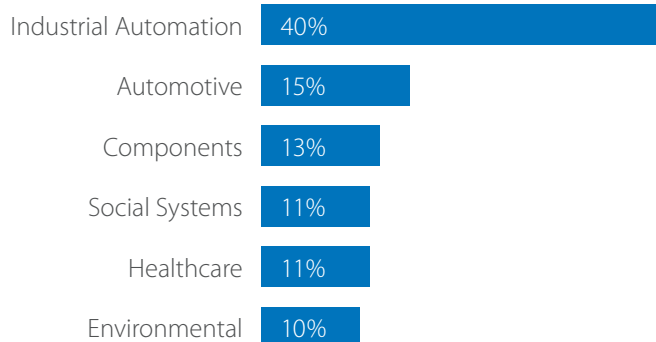
210

Locations worldwide

22

Countries in EMEA

Working for the
benefit of society



Close to your needs

Technical training & seminars, technical support, Automation Technology Centers, online community (MyOmron), online catalogues and technical documentation, customer service & sales support, inter-operability labs (Tsunagi), safety services, repairs.

Your needs, our focus

Solutions perfectly matching your needs

We asked ourselves: 'What do you need in sensors and components?' Well, first you need reliability. Then a variety and choice of performance levels. You may also want advanced functionality, with special features defined by you – or you may want standardized solutions, with highly competitive prices.

Whatever it is, it can all add up to a wish list that is difficult to fulfil. Until now. That's because our new 361° Approach not only provides a complete all-round offer without gaps, it also puts you at the very centre of the product selection process. It's an approach that leads to a Perfect Match – one with the extra degree of confidence that comes from choosing Omron.

361° in one view



Quality



Line-up



Application



Customization



Global availability



Specs

	Quality	Line-up	Application	Customization	Global availability	Specs
PRO^{plus}	Premium	Tailored	Special	Yes	Yes	Application oriented
PRO	Premium	Complete	Advanced	Yes	Yes	Above Standard
LITE	Premium	Standard	Basic	No	No	Basic
	'Quality' refers to the standard of manufacturing and the materials used – this translates into reliability	'Line-up' refers to the number of model types	'Application' indicates the complexity of the automation	'Customization' is the possibility to modify the product		'Specs' refers to the choice of performance levels

The extra degree of advantage

Three distinct lines of sensors and components

Three distinct lines

361° Approach offers three distinct lines within each sensor or component product category. LITE products are cost-effective without any compromise in quality. PRO products represent the “install & forget” option, offering longer lifetime, higher protection, and more features. While PROplus products are designed for specific applications or customer demands.

Optimized reliability

All three lines are backed by the Omron commitment to quality, so even when you need a price-competitive advantage, you can be confident that they will never let you down.

Solutions that perfectly match your needs

The 361° Approach ensures that you can quickly and easily identify the perfect match solution to your needs – nothing more, nothing less.

Optimized costs

Your sensor and component costs are also minimized – because it eliminates over-specification.

Why an extra 1°?

The extra degree is what you get when you do business with Omron, and that means different things to different customers – all depending on their needs. For example, if you need specification advice, the extra degree is ‘service’. But ultimately, to everyone it means “an extra degree of confidence in the perfect match”.



Sysmac: A fully integrated platform

Integration and Functionality

Sysmac is an integrated automation platform dedicated to providing complete control and management of your automation plant. At the core of this platform, the Machine Controller series offers synchronous control of all machine devices and advanced functionality such as motion, robotics and database connectivity. This multidisciplinary concept allows you to simplify solution architecture, reduce programming and optimize productivity.



Machine Automation Controller

FACTORY
AUTOMATION

MACHINE
CONTROL



Motion



Filling line

- Motion Control: Integrated within the IDE, and operating in real-time
- Standard PLCOpen Function Blocks plus Omron generated motion FB's
- Direct Synchronous control for Position, Speed and Torque



Safety



Assembly

- All safety related data is synchronized with the whole network
- Safety functions such as muting, guard locking, EDM and valve monitoring are simple to manage

- ✓ **One Integrated Development Environment software** for Configuration, Programming, Simulation and Monitoring



Information



Pills blister packing

- Sysmac communicates in real-time with Databases such as SQL
- Secure Data: In the event of a server going down or losing communications, data is automatically stored in internal memory
- Sysmac operates with Databases at high speed [1000 table element/ 100 ms] ensuring realistic Big Data Processing to improve productivity and aid predictive maintenance etc.

✓ Integrated Automation Control:

The Sysmac platform is scalable and provides the performance and functionality for a wide range of solutions from simple machines through to manufacturing cells

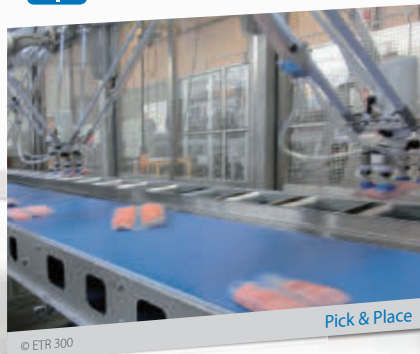
Vision



Quality inspection

- Higher resolution images available without increasing the vision processing time
- Shape search technology: Provides more stable and accurate object detection for Pick & Place projects

Robotics



Pick & Place

- Up to 8 Delta robots with one controller
- Time-based Robotic Function Blocks make programming easier

Sensing



Presence detection of the rubber seal

- Full control of the process parameter setting and predictive maintenance functions
- High precision detection and positioning data synchronized on the network

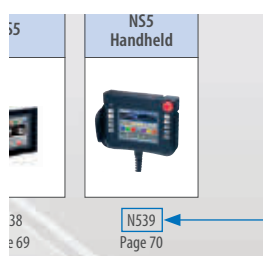
Product selection table

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Motion & Drives	 96 Motion controllers	 112 Servo systems	 170 Robots	 202 Frequency inverters
Sensing	 236 Photoelectric sensors	 278 Mark and Color sensors	 284 Lightcurtains and area sensors	 292 Fiber optic sensors and amplifiers
Quality control & Inspection	 370 Inspection & Ident systems	 426 Measurement sensors		
Safety	 462 Emergency stop and control devices	 472 Safety limit switches	 480 Safety door switches	 506 Safety sensors
Control components	 574 Temperature controllers	 596 Power supplies	 614 Uninterruptible power supplies (UPS)	 622 Timers
Switching components	 682 Electromechanical relays	 696 Solid state relays	 706 Low voltage switchgear	 722 Monitoring products
Software	 766 Software			

Control components

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Quick Link

Control components

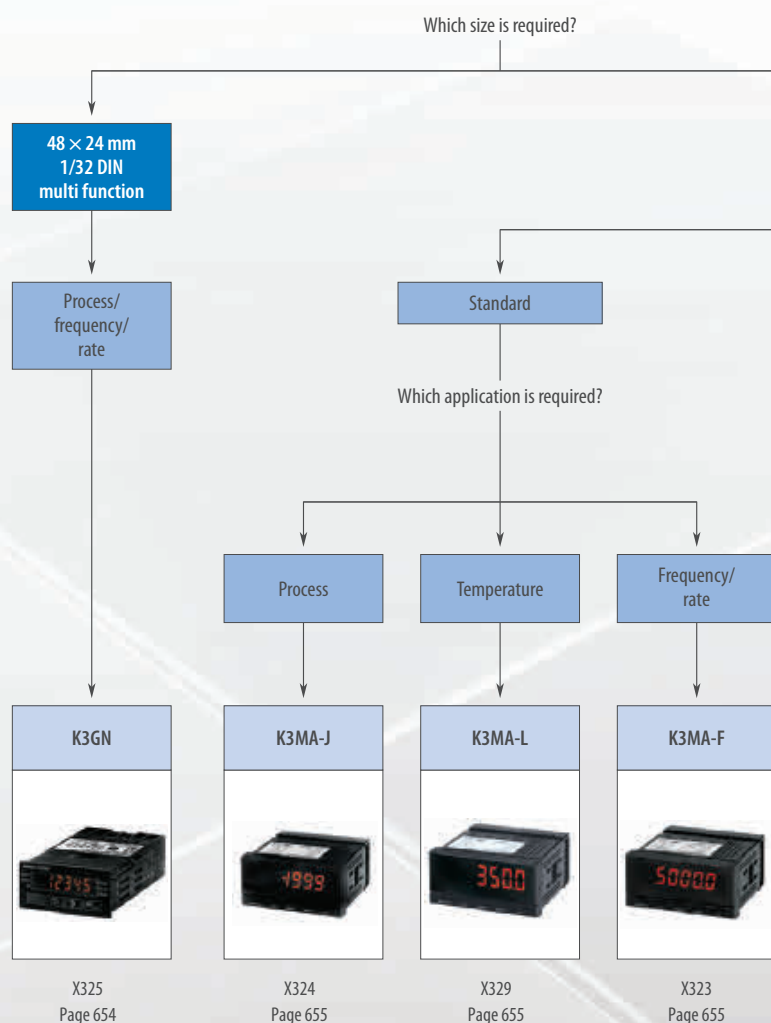
Temperature controllers	574	Timers	622
Selection table	576	Selection table	624
Basic temperature controllers		Analog solid state timers	
E5C2	579	H3DS	627
E5CSV	581	H3DK	628
E5CB	582	H3YN	629
K8AK-TH	749	H3CR	630
E5L	574	Digital timers	
E5L-A/C	576	H5CX	631
E5_L	576	H8GN	639
General purpose temperature controllers		Counters	632
E5_C	583	Selection table	634
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Selection table	598	Programmable relays	
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Power back-up unit		K3GN	654
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Uninterruptible power supplies (UPS)		D6FZ-FGT200/500/-FGS1000	671
S8BA	618	Power sensor stations	
BU_2RWL	620	ZN-KMX21	673
Photovoltaic	674	Photovoltaic	674
Selection table	677	Selection table	677
Three-phase		Three-phase	
KP100L	678	PID recovering	
PID recovering		PID box series	679
PID box series	679		

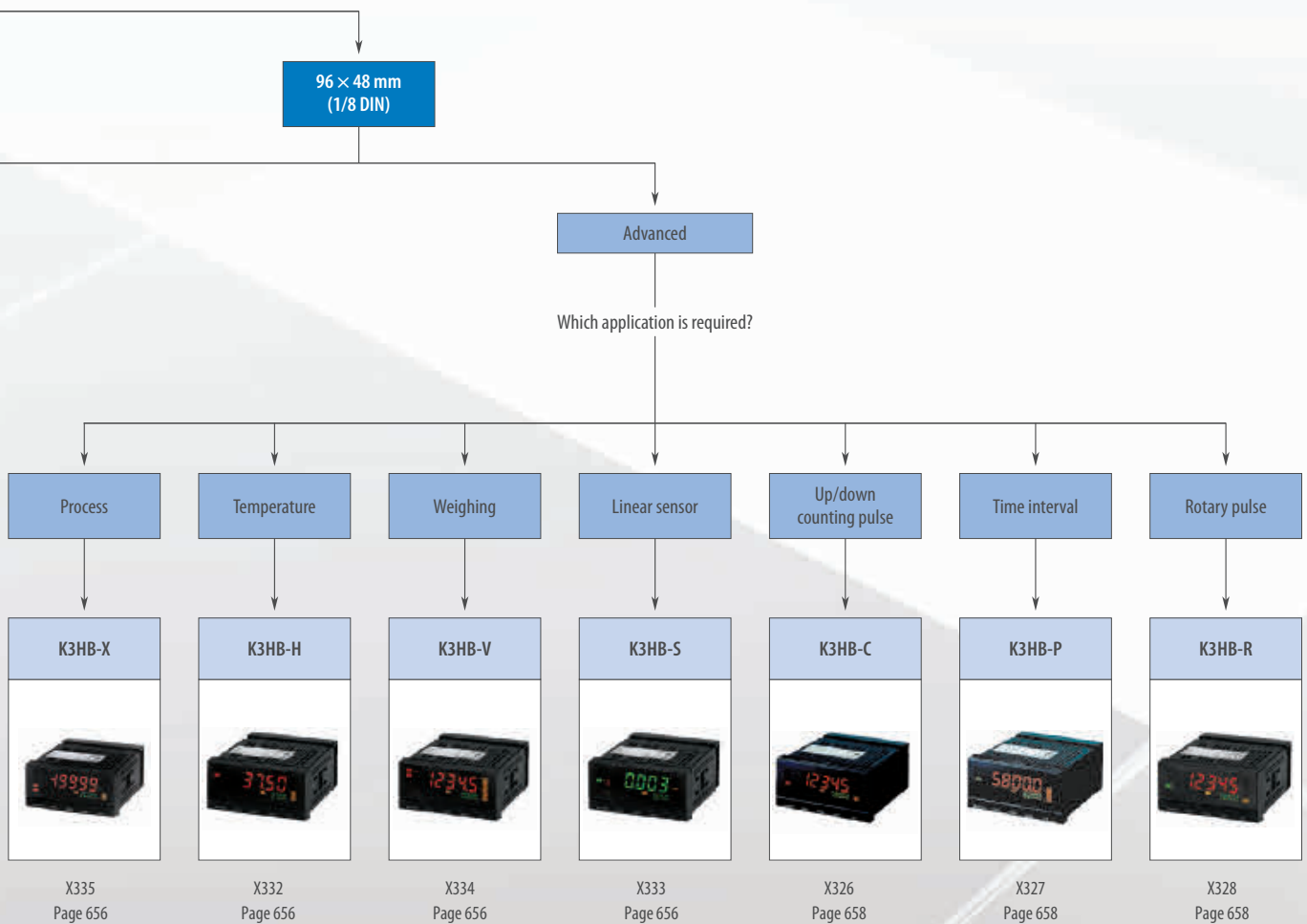
LOOKING FOR PERFECT MEASURING & READ-OUT?

K3HB-V – For perfect weighing






With our K3HB series we cover a wide range of applications. One of them is the weighing indicator which performs perfect measurement in any weighing application. The instrument can be equipped with a load-cell power supply of 10V/100mA. Several option boards for communication, contact output boards or event inputs are also available. On top of these you can get direct DeviceNet communication.







- High speed sampling 20 ms
- Equipped with position meter
- Two color display for easy recognition





Selection table

Category		Multifunctional digital panel indicator	Process indicator	Temperature indicator	Frequency/rate indicator	Process indicator
						
Model		K3GN	K3MA-J	K3MA-L	K3MA-F	K3HB-X
Size		1/32 DIN	1/8 DIN			
Features	Color change display	■	■	■	■	■
	Number of digits	5	5	4	5	5
	Leading zero suppression	■	■	■	■	■
	Forced zero function	■	■	■	■	■
	Min./max. hold function	■	■	■	■	■
	Average processing	■	■	■	■	■
	User selectable inputs	■	■	■	■	■
	Start-up compensating time	■	—	—	■	—
	Key protection	■	■	■	■	■
	Decimal point position setting	■	■	■	■	■
Features	Accuracy	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale (DC voltage & DC current), ±0.5% of full scale (AC voltage & AC current)
	Input range	0 to 20 mA, 4 to 20 mA or 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V or 0 to 30 Hz or 0 to 5 kHz	0 to 20 mA, 4 to 20 mA or 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V	Pt100, JPt100 or thermocouple K, J, T, E, L, U, N, R, S, B	0 to 30 Hz or 0 to 5 kHz	0.000 to 10.000 A, 0.0000 to 19.999 mA, -199.99 to 199.99 mA, 4.000 to 20.000 mA, 0.0 to 400.0 V, 0.0000 to 1.999 V, -199.99 to 199.99 V, 1.0000 to 5.0000 V
	Sample rate	250 ms	250 ms	500 ms	—	20 ms
	Features	Remote/local processing, parameter initialisation, programmable output configuration, process value hold	Teaching, comparative output pattern selection, parameter initialisation, programmable output configuration, process value hold	Programmable output configuration, process value hold	Teaching, comparative output pattern selection, programmable output configuration, process value hold	Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output
	Sensor power supply	—	—	—	■	□
Front protection	IP rating	IP66	IP66	IP66	IP66	IP66
	Supply voltage	24 VDC	24 VAC/VDC or 100 to 240 VAC	24 VAC/VDC or 100 to 240 VAC	24 VAC/VDC or 100 to 240 VAC	100 to 240 VAC or 24 VAC/VDC
Inputs	NPN	■	—	■	■	□
	PNP	■	—	■	■	□
	Temperature	—	—	—	—	—
	Contact	—	—	—	■	—
	Voltage pulse	—	—	—	■	—
	Load cell	—	—	—	—	—
	DC voltage	■	■	■	—	□
	DC current	■	■	—	—	□
	AC voltage	—	—	—	—	□
	AC current	—	—	—	—	□
Outputs	Relay	■	■	■	■	□
	NPN	■	—	—	—	□
	PNP	■	—	—	—	□
	Linear	—	—	—	—	□
	BCD	—	—	—	—	—
	Comms	■	—	—	—	□
Page/Quick Link		654/X325	655/X324	655/X329	655/X323	656/X335

Temperature indicator	Weighing indicator	Linear sensor indicator	Up/down counting pulse indicator	Time interval indicator	Rotary pulse indicator
					
K3HB-H	K3HB-V	K3HB-S	K3HB-C	K3HB-P	K3HB-R
1/8 DIN				—	—
■	■	■	■	■	■
5	5	5	5	5	5
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
—	—	—	—	—	■
■	■	■	■	■	■
■	■	■	■	■	■
Thermocouple: $\pm 0.3\%$ of full scale, Pt-100: $\pm 0.2\%$ of full scale	$\pm 0.1\%$ of full scale	One input: $\pm 0.1\%$ of full scale, two inputs: $\pm 0.2\%$ of full scale		$\pm 0.08\%$ rgd ± 1 digit	$\pm 0.006\%$ rgd ± 1 digit $\pm 0.02\%$ rgd ± 1 digit
Pt100, thermocouple K, J, T, E, L, U, N, R, S, B, W	0.00 to 199.99 mV, 0.000 to 19.999 mV, 100.00 mV, 199.99 mV	0 to 20 mA, 4 to 20 mA, 0 to 5 V, -5 to 5 V, -10 to 10 V	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz
20 ms	20 ms	0.5 ms	—	—	—
Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, 2-input calculation, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, measurement operation selection, output hysteresis, output OFF-delay, output test, display value selection, display color selection, key protection, bank selection, display refresh period, maximum/minimum hold, reset	Scaling, measurement operation selection, output hysteresis, output OFF-delay, output test, teaching, display value selection, display color selection, key protection, bank selection, display refresh period, maximum/minimum hold, reset	Scaling, measurement operation selection, averaging, previous average value comparison, output hysteresis, output OFF-delay, output test, teaching, display value selection, display color selection, key protection, bank selection, display refresh period, maximum/minimum hold, reset
□	□	□	□	□	□
IP66	IP66	IP66	IP66	IP66	IP66
100 to 240 VAC or 24 VAC/VDC	100 to 240 VAC or 24 VAC/VDC	100 to 240 VAC or 24 VAC/VDC	100 to 240 VAC or 24 VAC/VDC	100 to 240 VAC or 24 VAC/VDC	100 to 240 VAC or 24 VAC/VDC
□	□	□	■	■	■
□	□	□	■	■	■
■	—	—	—	—	—
—	—	—	—	—	—
—	—	—	■	■	■
—	■	—	—	—	—
—	—	■	—	—	—
—	—	■	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
□	□	□	□	□	□
□	□	□	□	□	□
□	□	□	□	□	□
□	□	□	□	□	□
—	—	—	□	□	□
□	□	□	□	□	□
656/X332	656/X334	656/X333	658/X326	658/X327	658/X328

■ Standard

□ Available

— No/not available



Compact and intelligent digital panel meter

The K3GN is able to cover a wide variety of applications with its 3 main functions: process meter, RPM processor/tachometer and digital data display for PC/PLC. Configuration is easy and the design is advanced and compact.

- Process indicator DC voltage/current
- RPM process/tachometer
- Digital data display for PC/PLC
- Very compact 1/32 DIN housing: Size in mm (HxWxD): 24x48x83mm
- 5-digit display with programmable display color, in red or green

Ordering information

Input type	Supply voltage	Output	Order code	
			No communications	RS-485
DC voltage/current, NPN	24 VDC	Dual relays (SPST-NO)	K3GN-NDC 24 DC	K3GN-NDC-FLK 24 DC
		Three NPN open collector	K3GN-NDT1 24 DC	K3GN-NDT1-FLK 24 DC
DC voltage/current, PNP		Dual relays (SPST-NO)	K3GN-PDC 24 DC	K3GN-PDC-FLK 24 DC
		Three PNP open collector	K3GN-PDT2 24 DC	K3GN-PDT2-FLK 24 DC

Specifications

Supply voltage	24 VDC
Operating voltage range	85 to 110% of the rated supply voltage
Power consumption	2.5 W max. (at max. DC load with all indicators lit)
Ambient temperature	Operating: -10 to 55°C (with no condensation or icing) Storage: -25 to 65°C (with no condensation or icing)
Display refresh period	Sampling period (sampling times multiplied by number of averaging times if average processing is selected)
Max. displayed digits	5 digits (-19999 to 99999)
Display	7-segment digital display, character height: 7.0 mm
Polarity display	"-" is displayed automatically with a negative input signal
Zero display	Leading zeros are not displayed
Scaling function	Programmable with front-panel key inputs (range of display: -19999 to 99999). The decimal point position can be set as desired.
External controls	HOLD: (measurement value held) ZERO: (forced-zero)
Hysteresis setting	Programmable with front-panel key inputs (0001 to 9999)
Other functions	Programmable color display Selectable output operating action Teaching set values Average processing (simple average) Lockout configuration Communications writing control (communications output models only)
Output	Relays: 2 SPST-NO Transistors: 3 NPN open collector 3 PNP open collector Combinations: Communications output (RS-485) + relay outputs Communications output (RS-485) + transistor outputs Communications output (RS-485) + transistor outputs (3 PNP open collector)
Communications	Communications function: RS-485
Delay in comparative outputs (transistor outputs)	750 ms max.
Degree of protection	Front-panel: NEMA4X for indoor use (equivalent to IP66) Rear case: IEC standard IP20 Terminals: IEC standard IP20
Memory protection	Non-volatile memory (EEPROM) (possible to rewrite 100,000 times)
Size in mm (HxWxD)	24x48x80



Highly visible LCD display with 2 color (red and green) LEDs

The K3MA series comes with a process meter, a frequency/rate meter and a temperature meter of either 100 to 240 VAC or 24 VAC/VDC. All are equipped with the same quality display and have the same short depth of 80 mm.

- 1/8 DIN size housing
- Highly visible, negative transmissive backlit LCD display
- 14.2 mm high characters
- 5 digits (–19,999 to 99,999), K3MA-L: 4 digits
- Front-panel IP66

Ordering information

Indicator	Supply voltage	Input type & ranges	Output	Order code
Process meter	100 to 240 VAC	DC voltage: 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V	2 relay contact outputs (SPST-NO)	K3MA-J-A2 100-240VAC
	24 VAC/VDC	DC current: 0 to 20 mA, 4 to 20 mA	2 relay contact outputs (SPST-NO)	K3MA-J-A2 24VAC/VDC
Temperature meter	100 to 240 VAC	Platinum-resistance thermometer: Pt100, JPt100 or thermocouple K, J, T, E, L, U, N, R, S, B	1 relay contact output (SPDT)	K3MA-L-C 100-240VAC
	24 VAC/VDC		1 relay contact output (SPDT)	K3MA-L-C 24VAC/VDC
Frequency/rate meter	100 to 240 VAC	Rotary pulse: No voltage: 0.05 to 30.00 Hz; open collector: 0.1 to 5000.0 Hz	2 relay contact outputs (SPST-NO)	K3MA-F-A2 100-240VAC
	24 VAC/VDC		2 relay contact outputs (SPST-NO)	K3MA-F-A2 24VAC/VDC

Accessories

Type	Order code
Splash-proof soft cover	K32-49SC
Hard cover	K32-49HC

Specifications

Item	100-240 VAC models	24 VAC/VDC models
Supply voltage	100 to 240 VAC	24 VAC (50/60 Hz), 24 VDC
Operating voltage range	85 to 110% of the rated supply voltage	
Power consumption (under maximum load)	6 VA max.	4.5 VA max. (24 VAC) 4.5 W max. (24 VDC)
Ambient temperature	Operating: –10 to 55°C (with no condensation or icing) Storage: –25 to 65°C (with no condensation or icing)	
Weight	Approx. 200 g	
Display	7-segment digital display, character height: 14.2 mm	
Polarity display	“-” is displayed automatically with a negative input signal	
Zero display	Leading zeros are not displayed	
Hold function	Max. hold (maximum value), min. hold (minimum value)	
Hysteresis setting	Programmable with front-panel key inputs (0001 to 9,999)	
Delay in comparative outputs	1 s max.	
Degree of protection	Front-panel: NEMA4X for indoor use (equivalent to IP66) Rear case: IEC standard IP20 Terminals: IEC standard IP00 + finger protection (VDE 0106/100)	
Memory protection	Non-volatile memory (EEPROM) (possible to rewrite 100,000 times)	
Size in mm (H×W×D)	48×96×80	



Process, temperature, weighing and linear sensor indicators

These indicators with analog input feature a clear and easy-to-use color change display. All models are equipped with an IP66 housing. K3HB series is high speed, with a sample rate of 50 Hz, and even 2,000 Hz for K3HB-S

- Position meter indication for easy monitoring
- Optional DeviceNet, RS-232C, RS-485
- Double display, with 5 digits, in two colors
- 1/8 DIN size housing

Ordering information

Type of indicator	Input sensor type and range	Supply voltage	Order code
Process indicator K3HB-X	AC current input, from 0.000 to 10.000 A, 0.0000 to 19.999 mA	100 to 240 VAC	K3HB-XAA 100-240VAC
		24 VAC/VDC	K3HB-XAA 24VAC/VDC
	DC current input, from ± 199.99 mA, to 4.000 to 20.000 mA	100 to 240 VAC	K3HB-XAD 100-240VAC
		24 VAC/VDC	K3HB-XAD 24VAC/VDC
	AC voltage input, from 0.0 to 400.0 V to 0.0000 to 1.999 V	100 to 240 VAC	K3HB-XVA 100-240VAC
		24 VAC/VDC	K3HB-XVA 24VAC/VDC
	DC voltage input, from ± 199.99 V to 1.0000 to 5.0000 V	100 to 240 VAC	K3HB-XVD 100-240VAC
		24 VAC/VDC	K3HB-XVD 24VAC/VDC
Temperature indicator K3HB-H	Temperature input Pt100, thermocouple K, J, T, E, L, U, N, R, S, B, W	100 to 240 VAC	K3HB-HTA 100-240VAC
		24 VAC/VDC	K3HB-HTA 24VAC/VDC
Weighing indicator K3HB-V	Load cell input (DC low voltage input), 0.00 to 199.99 mV, 0.000 to 19.999 mV, 100.00 mV, 199.999 mV	100 to 240 VAC	K3HB-VLC 100-240 VAC
		24 VAC/VDC	K3HB-VLC 24VAC/VDC
Linear sensor indicator K3HB-S	DC process input, 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	24 VAC/VDC	K3HB-SSD AC/DC24
		100 to 240 VAC	K3HB-SSD AC100-240

Option boards

Sensor power supply/output boards

Slot	Output		Sensor power supply	Communications	Applicable indicator types	Order code
B	Relay	PASS: SPDT	12 VDC $\pm 10\%$, 80 mA	—	K3HB-X, -H, -S	K33-CPA ^{*1}
		Linear current DC0(4) - 20 mA		—	K3HB-X, -H, -S	K33-L1 A ^{*2}
		Linear voltage DC0(1) - 5 V, 0 to 10 V		—	K3HB-X, -H, -S	K33-L2A ^{*2}
	—	—		—	K3HB-X, -H, -S	K33-A ^{*2}
	—	—		RS-232C	K3HB-X, -H, -S	K33-FLK1 A ^{*2}
	—	—		RS-485	K3HB-X, -H, -S	K33-FLK3A ^{*2}
	Relay	PASS: SPDT	10 VDC $\pm 5\%$, 100 mA	—	K3HB-V	K33-CPB ^{*1}
		Linear current DC0(4) - 20 mA		—	K3HB-V	K33-L1B ^{*2}
		Linear voltage DC0(1) - 5 V, 0 to 10 V		—	K3HB-V	K33-L2B ^{*2}
	—	—		—	K3HB-V	K33-B ^{*2}
	—	—		RS-232C	K3HB-V	K33-FLK1B ^{*2}
	—	—		RS-485	K3HB-V	K33-FLK3B ^{*2}
	—	—		—	—	—
	—	—		—	—	—

Relay/transistor output boards

Slot	Output		Communications	Order code
C	Relay	H/L: SPDT each	—	K34-C1
		HH/H/LL/L: SPST-NO each	—	K34-C2
	Transistor	NPN open collector: HH/H/PASS/L/LL	—	K34-T1
		PNP open collector: HH/H/PASS/L/LL	—	K34-T2
	—	—	DeviceNet	K34-DRT ^{*2}
	—	—	—	—

Event input boards

Slot	Input type	Number of points	Communications	Order code
D	NPN open collector	5	M3 terminal blocks	K35-1
		8	10-pin MIL connector	K35-2
	PNP open collector	5	M3 terminal blocks	K35-3
		8	10-pin MIL connector	K35-4

^{*1} CPA/CPB can be combined with relay outputs only.

^{*2} Only one of the following can be used by each digital indicator: RS-232C/RS-485 communications, a linear output, or DeviceNet communications.
K3HB has got three slots for option boards: Slot B, slot C and slot D.

Accessories

Type	Order code
Special cable (for event inputs with 8-pin connector)	K32-DICN

Specifications

Power supply voltage			100 to 240 VAC (50/60 Hz), 24 VAC/VDC, DeviceNet power supply: 24 VDC
Allowable power supply voltage range			85 to 110% of the rated power supply voltage, DeviceNet power supply: 11 to 25 VDC
Power consumption			100 to 240 V: 18 VA max. (max. load), 24 VAC/DC: 11 VA/7 W max. (max. load)
Display method			Negative LCD (backlit LED) display 7-segment digital display (character height: PV: 14.2 mm (green/red); SV: 4.9 mm (green))
Ambient operating temperature			−10 to 55°C (with no icing or condensation)
Display range			−19,999 to 99,999
Weight			Approx. 300 g (base unit only)
Degree of protection		Front-panel	Conforms to NEMA 4X for indoor use (equivalent to IP66)
		Rear case	IP20
		Terminals	IP00 + finger protection (VDE0106/100)
Memory protection			EEPROM (non-volatile memory), number of rewrites: 100,000
Event input ratings		Contact	ON: 1 kΩ max., OFF: 100 kΩ min.
		No-contact	ON residual voltage: 2 V max., OFF leakage current: 0.1 mA max., load current: 4 mA max. Maximum applied voltage: 30 VDC max.
Output ratings	Transistor output	Maximum load voltage	24 VDC
		Maximum load current	50 mA
		Leakage current	100 μA max.
	Contact output (resistive load)	Rated load	5 A at 250 VAC, 5 A at 30 VDC
		Rated through current	5 A
		Mechanical life expectancy	5,000,000 operations
		Electrical life expectancy	100,000 operations
	Linear output	Allowable load impedance	500 Ω max. (mA); 5 kΩ min. (V)
		Resolution	Approx. 10,000
		Output error	±0.5% FS
Size in mm (H×W×D)			48×96×100



Rotary pulse, timer interval and up/down counting pulse indicators

These indicators with analog input feature a clear and easy-to-use color change display. All models are equipped with an IP66 housing. K3HB-R and -C are high-speed, with a sample rate up to 50 kHz.

- Position meter indication for easy monitoring
- Optional DeviceNet, RS-232C, RS-485
- Double display, with 5 digits, in two colors
- 1/8 DIN size housing

Ordering information

Type of indicator	Input ranges	Supply voltage	Input sensor	Order code
Rotary pulse indicator K3HB-R	No voltage contact: 30 Hz max. Voltage pulse: 50 kHz max. Open collector: 50 kHz max.	100 to 240 VAC	NPN input/voltage pulse	K3HB-RNB 100-240VAC
		24 VAC/VDC		K3HB-RNB 24VAC/VDC
		100 to 240 VAC	PNP input	K3HB-RPB 100-240VAC
		24 VAC/VDC		K3HB-RPB 24VAC/VDC
		100 to 240 VAC	NPN	K3HB-PNB 100-240VAC
		100 to 240 VAC	PNP	K3HB-PPB 100-240VAC
Timer interval indicator K3HB-P		24 VAC/VDC	PNP	K3HB-PPB 24VAC/VDC
		100 to 240 VAC	NPN	K3HB-CNB 100-240VAC
Up/down counting pulse indicator K3HB-C		24 VAC/VDC	NPN	K3HB-CNB 24VAC/VDC
		24 VAC/VDC	PNP	K3HB-CPB 24VAC/VDC

Option boards

Sensor power supply/output boards

Slot	Output	Sensor power supply	Communications	Order code
B	Relay	PASS: SPDT	12 VDC \pm 10%, 80 mA	K33-CPA ^{*1}
	Linear current	DC0(4) - 20 mA		K33-L1 A ^{*2}
	Linear voltage	DC0(1) - 5 V, 0 to 10 V		K33-L2A ^{*2}
	—	—		K33-A ^{*2}
	—	—		RS-232C
	—	—		RS-485

Relay/transistor output boards

Slot	Output	Communications	Order code
C	Relay	H/L: SPDT each	K34-C1
		HH/H/LL/L: SPST-NO each	K34-C2
	Transistor	NPN open collector: HH/H/PASS/L/LL	K34-T1
		PNP open collector: HH/H/PASS/L/LL	K34-T2
	—	DeviceNet	K34-DRT ^{*2}
	BCD + transistor	NPN open collector: HH/H/PASS/L/LL	K34-BCD

Event input boards

Slot	Input type	Number of points	Communications	Order code
D	NPN open collector	5	M3 terminal blocks	K35-1
		8	10-pin MIL connector	K35-2
	PNP open collector	5	M3 terminal blocks	K35-3
		8	10-pin MIL connector	K35-4

^{*1} CPA can be combined with relay outputs only.

^{*2} Only one of the following can be used by each digital indicator: RS-232C/RS-485 communications, a linear output, or DeviceNet communications.
K3HB has got three slots for option boards: Slot B, slot C and slot D.

Accessories

Type	Order code
Special cable (for event inputs with 8-pin connector)	K32-DICN
Special BCD output cable	K32-BCD

Specifications

Power supply voltage			100 to 240 VAC (50/60 Hz), 24 VAC/VDC, DeviceNet power supply: 24 VDC
Allowable power supply voltage range			85 to 110% of the rated power supply voltage, DeviceNet power supply: 11 to 25 VDC
Power consumption			100 to 240 V: 18 VA max. (max. load), 24 VAC/DC: 11 VA/7 W max. (max. load)
Display method			Negative LCD (backlit LED) display 7-segment digital display (character height: PV: 14.2 mm (green/red); SV: 4.9 mm (green))
Ambient operating temperature			–10 to 55°C (with no icing or condensation)
Display range			–19,999 to 99,999
Weight			Approx. 300 g (base unit only)
Degree of protection		Front-panel	Conforms to NEMA 4X for indoor use (equivalent to IP66)
		Rear case	IP20
		Terminals	IP00 + finger protection (VDE0106/100)
Memory protection			EEPROM (non-volatile memory), number of rewrites: 100,000
Event input ratings		Contact	ON: 1 k Ω max., OFF: 100 k Ω min.
		No-contact	ON residual voltage: 2 V max., OFF leakage current: 0.1 mA max., load current: 4 mA max. Maximum applied voltage: 30 VDC max.
Output ratings	Transistor output	Maximum load voltage	24 VDC
		Maximum load current	50 mA
		Leakage current	100 μ A max.
	Contact output (resistive load)	Rated load	5 A at 250 VAC, 5 A at 30 VDC
		Rated through current	5 A
		Mechanical life expectancy	5,000,000 operations
		Electrical life expectancy	100,000 operations
	Linear output	Allowable load impedance	500 Ω max. (mA); 5 k Ω min. (V)
		Resolution	Approx. 10,000
Output error		\pm 0.5% FS	
Size in mm (H×W×D)			48×96×100