

GENERAL CATALOGUE 2004/2005

# Industrial Components



- Electromechanical Relays
- Timers
- Counters
- Programmable Relays
- Level Controllers
- Limit Switches
- Pushbutton Switches
- Low Voltage Switch Gear
- Temperature Controllers
- Solid State Relays
- Panel Indicators
- Power Supplies

Advanced Industrial Automation

Cat. No. Y202-EN2-02 ICD

**OMRON**

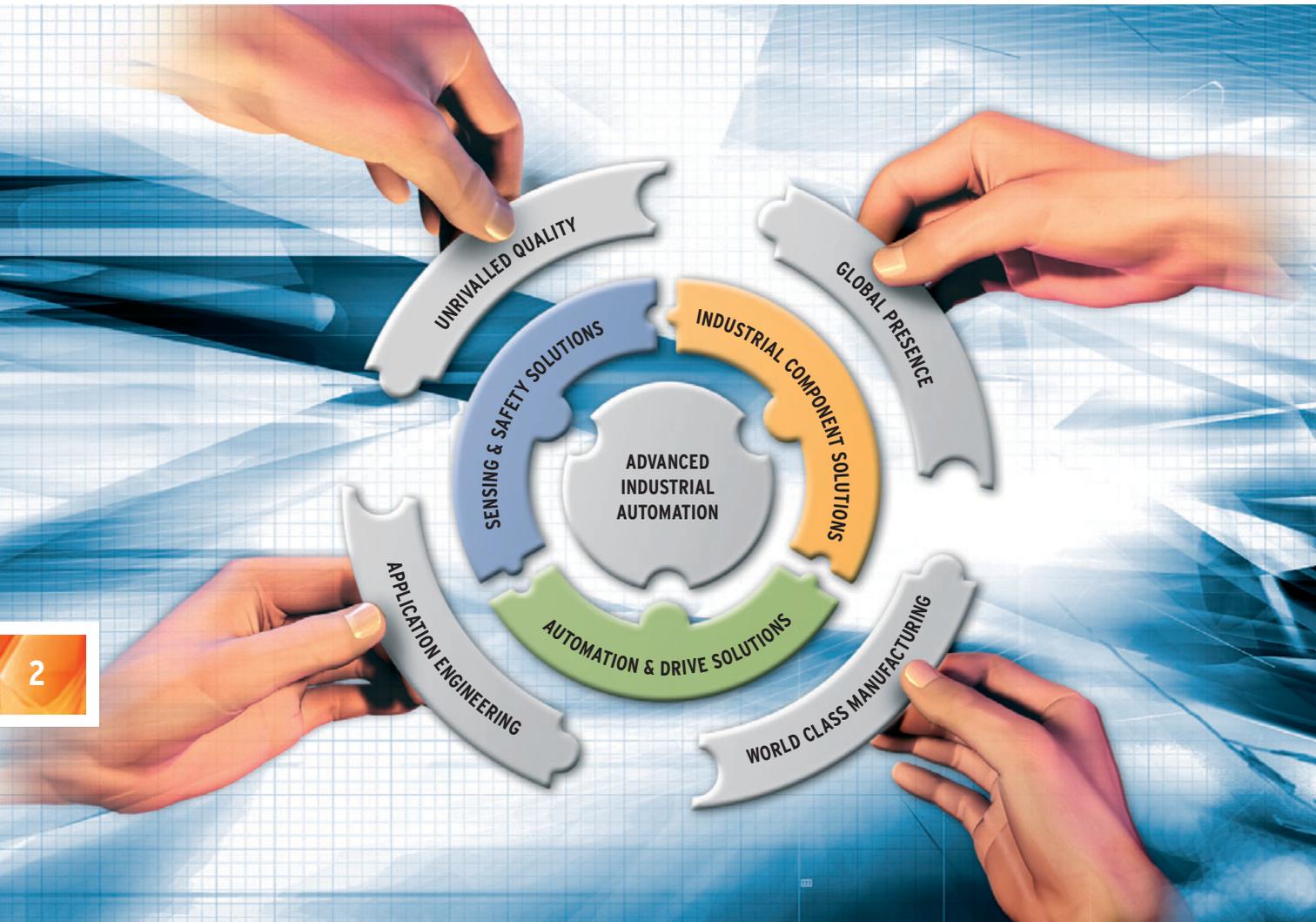
# WELCOME TO OMRON'S INDUSTRIAL COMPONENTS CATALOGUE

This catalogue features products that are ideally suited for use in today's control panels. All of Omron's products lead the field in installation and maintenance. The introduction of the new Screw-Less Clamp terminals for timers and sockets, together with our new concept in display technology are prime examples of this. More about these new technologies and the latest products can be found on pages 6-9 of this catalogue.



- 2** Advanced Industrial Automation
- 4** Proven application expertise
- 5** Our products make the world go round
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- 14** Product selection table
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# ADVANCED INDUSTRIAL AUTOMATION



Today's industrial manufacturers are constantly faced with new challenges posed by ever increasing demands on performance, quality and cost. In an environment where every movement, every component and every assembly operation must be immediately and automatically recorded, checked and documented for maximum efficiency, Omron can provide the solution.

Omron's industrial automation product range includes optical sensors and measuring systems, high-speed industrial-grade image processing systems, controlling and switching devices, highly dynamic drives and product tracking systems for information interchange, all of which meet today's industrial automation challenges.

Omron also caters to the logistics and information processing sectors by developing advanced network and field bus systems, which ensure that relevant data collected in the field by sensors and other equipment can be easily accessed and analysed by production managers through standard Office applications.

Omron is your one-stop shop for future-oriented products matched to perform in perfect unison. We are constantly developing new products and enhancing existing ones. Each year sees the introduction of at least 20 new product ranges in industrial components, safety engineering, sensors, image processing, drives and automation systems.



Our close relations with customers and partners in industry mean we are well-placed to quickly identify new trends which we can incorporate in the development of our own new products. In this we are helped by our Research and Development (R&D) Centres and our highly efficient production sites in the major regions of the world. With such distributed facilities, Omron can achieve customer-specific solutions and modifications with a very short time to market.

In fact our customers see us more as joint developers for their own machinery and plant and as solution providers for their increasingly complex automation requirements, while we see our customers as providing the product

ideas and development impetus so vital to our own future. It's a partnership that works very well on both sides.

You too can choose such a partnership. Choose Advanced Technology & Services – choose Omron.



# OUR PRODUCTS MAKE THE WORLD GO ROUND



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“We have touched your life”

Omron’s technologies support the way the world lives and works - it is very likely that their effect will have touched your life in some way over the past 24 hours. You’ll find Omron automation products everywhere: in coffee vending machines and cash machines, traffic lights and petrol pumps, in hospitals and surgeries – and, of course, in factories all over the world, helping to make the products you use every day.

Whatever industry you are in, Omron can help make you more efficient, more reliable, more competitive and more profitable. Just ask any Omron customer!



# NEW PRODUCT SOLUTIONS



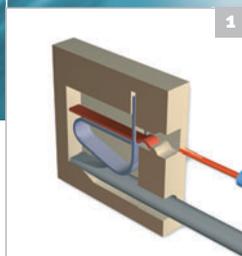
## Screw-Less Clamp solutions

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### Unique 1-2-3 step wiring process!

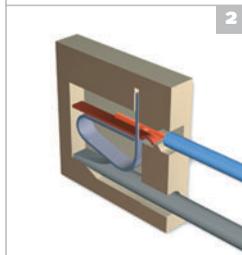
The timer and socket's unique mechanism uses no screws, so there's no time wasted turning screws during wiring. Just three steps are required:

This procedure takes less than half the conventional wiring time, and is much more reliable!



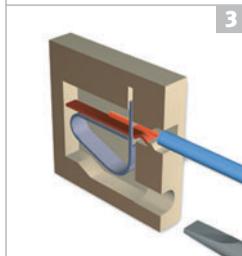
1

Insert the screwdriver



2

Insert the wire



3

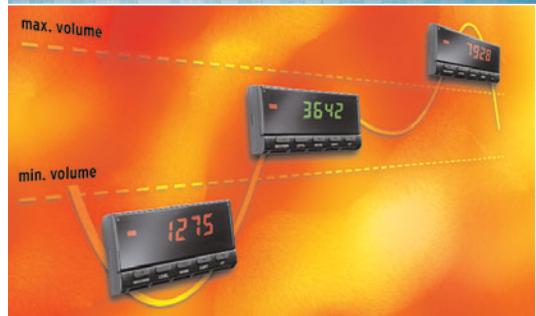
Withdraw the screwdriver

Omron is the first manufacturer to use SLC (Screw-Less Clamp) technology in a standard socket for industrial relays. These SLC sockets offer significant savings on material (crimp terminals) and wiring time. There's no over or under tightening of the cable connection, so better contact reliability is always achieved. Omron's sockets can be used with solid or stranded wire, with or without crimped terminals. Double wiring and easy bridge and branch connections are all possible on all terminals. And because each socket is wired from the top instead of the side, the cable troughs can be mounted directly at the socket, saving space in the switch cabinet.

The use of SLC technology also eliminates the need to check clamp screws regularly in case they need tightening. Omron has designed a complete range of timers with Screw-Less Clamps, as well as sockets for a wide range of relays, timers and controllers. When used in combination with associated products these sockets guarantee safe switching and meet the most demanding specifications. In addition, a unique ejector in each socket makes product replacement very easy.

## Two-colour display solutions

Many of Omron's indicators, timers and temperature controllers have a unique parameter-linked display colour. Their highly visible, two-colour displays provide an unambiguous indication of the status of your process, in all lighting conditions. For demanding industrial applications, the range features products that meet protection classes IP66, enabling them to be mounted in switch cabinet doors. In addition, each product range has a similar 'look and feel' with its uniform display design, easy set-up and operation, coupled with a similar intuitive way of programming.



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	<p><b>K3GN panel indicator</b></p>	<ul style="list-style-type: none"> <li>• Precise, reliable information on process signals, temperature and rate/frequency applications</li> <li>• Multi-functional 1/32 DIN</li> <li>• Optional communication possibilities</li> </ul>	<p>► Page K-7</p>
	<p><b>E5CN temperature controller</b></p>	<ul style="list-style-type: none"> <li>• Highly versatile temperature controller for front panel or DIN-rail mounting</li> <li>• Most complete controller on the market</li> <li>• Wide range of input signals</li> </ul>	<p>► Page I-21</p>
	<p><b>K3MA 1/8 DIN panel indicator</b></p>	<ul style="list-style-type: none"> <li>• Precise, reliable information on process signals, temperature and rate/frequency applications</li> <li>• Also available with event output for alarm or display colour switching.</li> <li>• Clean, label-free front suitable for end-users and OEMs</li> </ul>	<p>► Page K-29</p>
	<p><b>H5CX timer</b></p>	<ul style="list-style-type: none"> <li>• Provides multiple timing ranges for precise timing control</li> <li>• Real twin-timer function with independent On/Off time setting</li> <li>• Memory function retains process data in the event of a power failure</li> </ul>	<p>► Page B-159</p>
	<p><b>H7CX counter</b></p>	<ul style="list-style-type: none"> <li>• Provides the ultimate in versatility and intuitive programming</li> <li>• Pre-scaling for operating directly in a variety of values (litres, kgs, metres etc.)</li> <li>• Choice of outputs provides for almost every switching application requirement</li> </ul>	<p>► Page C-85</p>

# NEW PRODUCT SOLUTIONS

## E5CN - the best temperature controller around



Omron's E5CN was the first temperature controller to offer the high-clarity, back-lit LCD display with colour change technology in a 1/16 DIN format. Now Omron has brought this world's best-selling controller to the next level. The E5CN display shows not only the process value in large, 11mm digits, it also has a tri-colour back-lit matrix that gives red, green and orange.

These colours can be configured to occur on events such as an alarm condition or out-of-band warning. The new E5CN can be automatically tuned to give the maximum control performance, and thanks to Omron's unique 2-PID control, this applies to both approach-to-set value and response-to-disturbance. The benefits of this over normal PID include faster start-up times and improved

response, which means that the quality of the end product can be maintained in changing circumstances. The user doesn't have to take any special action; the controller's built-in technology does all the work! Many features have been further improved along with the introduction of some new innovative technologies that users will greatly appreciate.

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## Colour Change - the new display characteristics



Omron has launched a range of panel instruments where the process value colour visualises the status of a process. This unique function alerts any member of staff to an alarm condition by changing the display colour from green to red or vice versa. The display colours can be pre-programmed so that they change in an alarm situation, when reaching a pre-set value, or when values vary outside a pre-set threshold.

Each panel instrument features a high-tech crystal-clear LCD display that provides excellent visibility in all lighting conditions and from a wide angle. All instruments have dust- and waterproof fronts that meet IP66 rating, and they conform to all general approvals. Omron is currently the only company to feature such a range of panel instruments with such colour display characteristics. Products that are equipped with this function include E5CN Temperature Controllers, K3GN and K3MA

Two-colour Display Panel Indicators, H5CX Digital Timers and H7CX Digital Counters. These panel instruments are very suitable for a wide range of applications. They can be used as alarm indicators that show a particular status of a process, in a furnace to indicate the completion of a process, or to grasp the idling state of equipment. In Pump- and Valve applications these instruments are ideal for monitoring whether the valve is open or closed, and whether or not the pump is operational.

## S8VS - compact DIN rail power supply with LED display

Omron's S8VS power supply series features a unique 3-digit, 7-segment LED display that provides data on output voltage, output current and output peak current for faster, easier diagnostics. The S8VS is ultra-compact, so it requires less panel space than competitors' models. Its DIN rail click-on system makes installation a very easy process, and it is available in a variety of power ratings from 60W to 240W.



The S8VS series is the first power supply family in Europe to have an LED display. Via this display you can check the status of voltage, current, and peak current of the unit. The display makes diagnostics and maintenance easier, and helps detect power supply and power line problems faster. The S8VS also features a built-in run-time monitor

that indicates the total operation time of the power supply. This helps a preventive maintenance and thus reduces operational and maintenance costs as a whole. The S8VS is the world smallest power supply. Mounting the power supply is easy, thanks to its DIN rail click-on system.

## K3HB - Omron's new panel indicator

Omron has developed an innovative new range of analogue input panel indicators built on state-of-the-art technology to set new benchmark standards in functionality and visibility. In the development of the 1/8 DIN K3HB range, Omron has focused on making the indicators simple to read, even at a distance, and to make interpreting those readings as intuitive as possible.



The K3HB indicators provide a bar-graph position indication, which is a unique in 1/8 DIN horizontal housing panel indicators. The sampling speed of this new range has been increased to 50 times per second, or 2.000 times per second for the linear sensor indicator version. Further, users can also specify DeviceNet communications, with the option of a DeviceNet output module delivering high-speed data communication with PLCs, without the need for special programming. The full range of K3HB analogue input panel indicators includes a

process indicator (K3HB-X), a temperature indicator (K3HB-H), a weighing indicator (K3HB-V) and a linear sensor indicator (K3HB-S). These indicators will provide convenient, high performance solutions in a broad spectrum of applications in the process industry, as well as in machinery applications in areas such as binding, soldering, semiconductor manufacture, moulding and mixing machines. The K3HB indicators are designed in a modular fashion, which enables users to select exactly the functionality they require.

# NEW PRODUCT SOLUTIONS

## ZEN - the logical automatic tools, for small scale flexible control



The ZEN is a modular, expandable, programmable relay that is designed to provide flexible, automatic control for small-scale machines and facilities. The ZEN combines all the functionality of timers, counters and relays to control multiple input and output signals, while being easy to install and program. It enables any daily routine that involves switching and control to be easily automated, which saves time and effort. And it is the perfect solution for

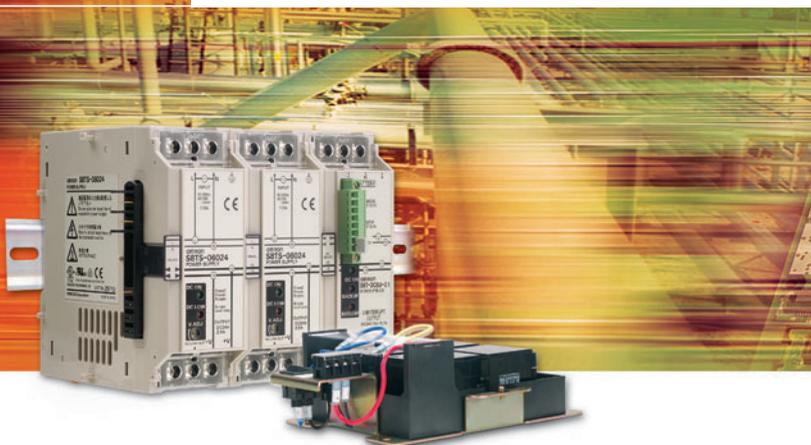
building automation applications where multiple timer control is very important.

Programming the ZEN is easy, thanks to a dedicated Omron support software package. Once you have created a program you can even save it to a memory module and copy to another ZEN without having to use a PC! In addition, you can enhance the ZEN's operating capability sim-

ply by connecting more expansion I/O units. The ZEN can be used to control everything from fans and pumps to complex lighting sequences and escalators. And it is ideal for replacing dedicated printed-circuit boards, enabling you to make process changes without having to redesign a new board. A very flexible, cost-effective automation tool indeed!

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## S8TS - Omron's power supply with system back-up options



Omron's S8TS is an innovative DC power supply series with a unique 'building-block' concept that offers flexibility, reliability, standardisation and redundancy in any industrial automation system. The S8TS is available with a DC battery back-up unit and a Buffer unit that can be easily added to the power supply to ensure system integrity at all times.

This building-block concept produces one of the most flexible power supply systems around, and should appeal to those who need to maintain production in the event of a power failure.

The S8TS has three output types (5, 12 and 24 VDC) that enable more than 100 different power supplies to be configured. Each 'plug-together' power unit allows you to create collectives of 2.5, 5, 7.5 or 10A in 12 or 24VDC out-

put voltages. A 5VDC, 5A block is also available. The standard sized, DIN-rail mounting units make initial panel layout a simple operation. As load requirements change, increasing or decreasing power output capacity takes just minutes to achieve. At just 42mm wide, these units can be added as required up to a maximum of 10A per group. Unique bus connectors enable you to connect the input voltage internally to all linked power supply units.

## J7 - Minimum size, maximum performance

Omron introduces the new J7 Series of high-quality contactors, thermal overload relays, and motor protection circuit breakers to complement its existing portfolio. This series of feature-packed products is designed using state-of-the-art technology, and built by Omron on a product line that has been certified according to quality standards ISO 9001. The J7 Series offers impressive powerhandling capabilities on compact footprints.



Most models of the contactor range can operate in temperatures from  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ , making them ideal for use in extreme environmentally harsh conditions. Constructed according to European and International standards, these contactors, thermal overload relays and motor protection circuit breakers conform to EN/IEC and are

approved by UL/CSA, enabling them to be used in any part of the world. They are suitable for any industrial application and will appeal to panel builders, OEMs and engineers in the automotive, chemical and heavy power industries looking for the best choice in top-quality products from one supplier.

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## E5ZN - in-panel temperature control solutions

At just 22.5 mm wide, Omron's new E5ZN temperature controller series introduces one of the slimmest dual-loop controllers on the market. The E5ZN features all standard temperature control functionality, and thanks to its innovative design, mounting it onto a DIN-rail is simply a matter of click-and-go!



Its innovative design and built-in Omron quality guarantees process stability and saves panel builders valuable installation time, space and wiring costs. Space saving, easy to mount. Each slim-line unit controls two temperature loops, and as many as 16 units can be mounted side by side. This allows you to control up to 32 loops in the minimum amount of space, and at a lower cost-per-loop than anything the competition has to offer! Now with:

DeviceNet option, Retransmission outputs, Current control Features and benefits at a glance: Two control loops in one 22.5 mm module, easy and fast replacement of modules, without rewiring, voltage (SSR), Transistor or Current output, two alarm outputs as standard, heater burnout alarm or retransmission output, omron's renowned quality and reliability built in.

# NEW PRODUCT SOLUTIONS

## Controllers & SSRs - Omron's perfect partnership



Omron is the world's largest supplier of temperature controllers. This product range is unrivalled, and includes everything from the simplest controllers to advanced communication units that help you master any control application. Omron also offers a comprehensive range of solid-state relays (SSRs) that provides the perfect load switching for temperature control applications.

These SSRs are a fast reliable and cost-effective partner to our temperature controllers. Combinations of temperature controller and SSR are available to handle almost any application, including heater bands for plastics extrusion processes, packaging machinery and heater elements in general manufacturing. Only Omron could

bring you such a product choice, and all from one supplier! Designed and tested to Omron's renowned high standards, each product in this range meets all relevant international standards and provides consistently superb quality throughout its working life.

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## G2RS - Omron's general-purpose relays



With the G2RS relay Omron sets new standards in feature design and reliability. Since pioneering the widespread use of slim-line interface relays over a decade ago, Omron continues to be the first choice for relay users. The G2RS relay brings enhanced features and flexibility for more user-friendly installation, commissioning and operation.

Omron's G2RS relays offer unrivalled reliability, performance and product choice. Three relay types are available, in both single- and double-pole changeover contact arrangements, as well as AC and DC coil voltages. All models feature a mechanical indicator, and a nameplate onto which identification data can be added. The mainstream and full-featured models have an LED indicator which lights green for DC coil voltage types and red for AC coil voltage types). The G2RS relays are robust and com-

pact in design yet have a high switching capacity; the single-pole versions can switch an impressive 440VAC. They are built to Omron's own high quality and environmentally friendly standards, so a long, reliable working life is guaranteed. They meet all international standards, including UL, CSA, VDE, LR and CE. In addition, with the G2RS plug-in relay users have the choice of screw terminal or Screw-Less Clamp terminal sockets for maximum installation flexibility.

## S8T-DCBU-02 - Power management control range with new DC buffer unit

The S8T-DCBU-02 is a buffer block that is designed to prevent interruptions in equipment operation, loss of data or other problems resulting from a momentary power loss. It does this by providing a back-up power source as well as a shut-down time off process for at least 500ms (at 2.5A) to 1s (at 1A) in the event of a glitch or transient interruptions in the power supply.



The S8T-DCBU-02 can be used with all of Omron's power supplies, and is one of the most cost-efficient ways of ensuring the supply of power in industrial automation systems. Up to four such buffer blocks can be connected in parallel to increase the back-up time and current handling capacity. The S8T-DCBU-02 operates by using built-in capacitors that act as a temporary power source during a power failure. In addition, the capacitors charge the energy,

that has been increasingly generated by a boosted charging voltage to them, to deliver more power and provide a longer back-up time than can be expected from a standard back-up system. When the power supply recovers, these capacitors start recharging. Like other Omron power supplies, built-in over-current and over-voltage protection circuits in the buffer block protect equipment against damage caused by shorts and overloads.

## SLC solutions - for faster, more reliable wiring

Screw-Less Clamp (SLC) technology offers an effective, time-saving, no-compromise wiring solution in industrial environments. The technology reduces wiring time, eliminates routine maintenance and provides a very reliable connection. And Omron is the first manufacturer to use this SLC technology in standard sockets for a whole range of industrial products!



This procedure takes less than half the conventional wiring time, and is much more reliable!

1. Insert the screwdriver. This presses the springs together and the opening is pushed upwards.
2. Insert the wire (any wire with a cross-section of 0.2 to 1.5 mm<sup>2</sup> can be inserted)
3. Withdraw the screwdriver. The springs tension and the opening moves downward, tightly clamping the wire.

# PRODUCT SELECTION TABLE

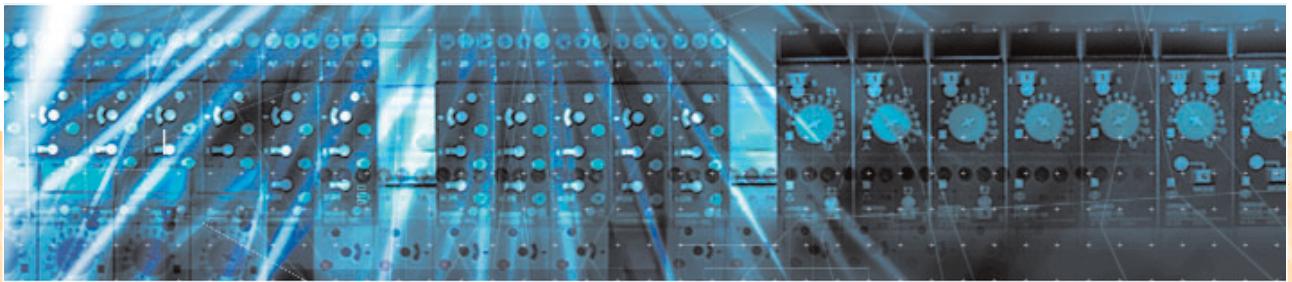
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<b>Electro-mechanical Relays</b>	<b>Timers &amp; Counters</b>	<b>Programmable Relays</b>	<b>Level Controllers</b>	<b>Limit Switches</b>	<b>Pushbutton Switches</b>
<ul style="list-style-type: none"> <li>• MY</li> <li>• G2RS</li> <li>• LY</li> <li>• MK-I/-S</li> <li>• G7J</li> </ul>	<ul style="list-style-type: none"> <li>• H3DS</li> <li>• H3DE</li> <li>• H3YN</li> <li>• H3HR</li> <li>• H3CR</li> <li>• H5CX</li> <li>• K3NP</li> <li>• H2C</li> <li>• H7E</li> <li>• H7GP/H7/HP</li> <li>• H8GN</li> <li>• H7CX</li> <li>• K3NC</li> <li>• H8PS</li> </ul>	<ul style="list-style-type: none"> <li>• ZEN</li> <li>• ZEN-PA03024</li> </ul>	<ul style="list-style-type: none"> <li>• 61F-GP-N8</li> <li>• 61F-GPN-BT</li> <li>• 61F-GPN-BC</li> <li>• K7L-AT50</li> <li>• K7L-AT50D</li> <li>• K7L-AT50D-S</li> <li>• F03-16PE</li> <li>• F03-16PT</li> </ul>	<ul style="list-style-type: none"> <li>• D4C</li> <li>• D4E-_N</li> <li>• SHL</li> <li>• WL</li> <li>• WLM_</li> <li>• ZC-_55</li> <li>• ZE/ZV/XE/XV</li> <li>• A</li> <li>• DZ</li> <li>• TZ</li> <li>• X</li> <li>• Z</li> <li>• Z/A/X/DZ</li> </ul>	<ul style="list-style-type: none"> <li>• A16</li> <li>• A16_-P</li> <li>• A165K</li> <li>• A165S/W</li> <li>• A22</li> <li>• A22K</li> <li>• A22S/W</li> <li>• M16</li> <li>• M22</li> </ul>
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## On request

<ul style="list-style-type: none"> <li>• G7L</li> <li>• G4Q</li> <li>• MYK</li> </ul>	<ul style="list-style-type: none"> <li>• H5CR</li> <li>• H5BR</li> <li>• H2A</li> <li>• H3AM</li> <li>• H7CR</li> <li>• H7BR</li> </ul>			<ul style="list-style-type: none"> <li>• D4A -_N</li> <li>• D4CC</li> <li>• WLF6E</li> <li>• VB</li> <li>• HL-5000</li> </ul>	
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These products are only showed in the Selection Guide, for more information about these products please contact your local Omron sales Office or download the data from [www.eu.omron.com](http://www.eu.omron.com).



### Low Voltage Switch Gear

- J7KNA-AR
- J7KNA
- J7KN
- J7TKN
- J7MN

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### Temperature Controllers

- E5C2
- E5\_N
- E5CK
- E5AK/EK
- E5CK-T
- E5AK-T
- E5EK-T
- E5ZN
- E5ZN-DRT
- E5\_R
- ThermoTools

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### Solid State Relays

- G3NA
- G3NE
- G3PA
- G3PB
- G3PC
- G3R-I/O

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### Panel Indicators

- K3GN
- K3MA-J
- K3MA-L
- K3MA-F
- K3HB
- K3NR

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### Power Supplies

- S82K
- S8TS
- S8T-DCBU-01
- S8T-DCBU-02
- S8VS
- S8PS
- S82J
- S8PE

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### Others

- K3SC
- R87F/R87T
- PYF\_\_S
- P2RF\_\_S

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### On request

- E5CS-X
- E5ZE

- G3NH
- G3B/BD
- G3F/FD
- G3H/HD
- G3PX

- K3NP
- K3NC
- K3TE
- K3TF
- K3TG

- S82H
- S82S



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Relays

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Progr.  
Relays

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Switches

LVSG

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SSR

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