

# Industrial Automation Guide 2016



Industrial Products & Systems

[industrial.omron.eu](http://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](https://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 customer needs. The PROplus Line is a family of products that are designed to meet a wide range of customer needs. The PROplus Line is a family of products that are designed to meet a wide range of customer needs.

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## The 361° Approach

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## 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 maximising 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 maximising the speed and flexibility of machines. A platform that integrates robotic, motion and sequential logic control into a single multitasking system.

[Learn more](#)

**Sensors**

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[Learn more](#)

**Robotics**

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[Learn more](#)

**Image sensors**

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[Learn more](#)

## Related product news

**With new G2B sensors, you only pay for what you need**  
Optimizing relative proximity sensors in the new G2B range has been specifically designed to offer a cost-effective sensing solution or standard sensing conditions, making it unnecessary to buy more sensors than you actually need.

[Learn more](#)

## Related product news

**ES16 - Omron's new photo sensors combine simplicity with performance**  
Drawing on our experience of manufacturing over a million production sensors a year, we have developed a new generation of photo sensors that combine simple selection, installation with reliability, versatility, rugged construction and value for money.

[Learn more](#)

## Related product news

**RS-485 Control: New step towards the full integration of Automation**  
The RS-485 Control is a new step towards the full integration of Automation. It is a new step towards the full integration of Automation. It is a new step towards the full integration of Automation.

[Learn more](#)

**ES16 (D) for Machine Control**  
The ES16 (D) is a new step towards the full integration of Automation. It is a new step towards the full integration of Automation. It is a new step towards the full integration of Automation.

[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

## Find information fast!

Quick Links shortens your search. Quick Links are unique codes assigned to Omron products listed in this guide. Enter Quick Link codes in the search box on [industrial.omron.eu](http://industrial.omron.eu) to access detailed information on products in this guide.



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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

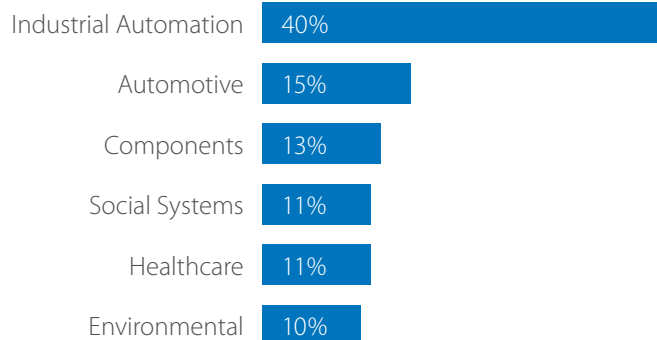
210

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
<b>PRO<sup>plus</sup></b>	Premium	Tailored	Special	Yes	Yes	Application oriented
<b>PRO</b>	Premium	Complete	Advanced	Yes	Yes	Above Standard
<b>LITE</b>	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

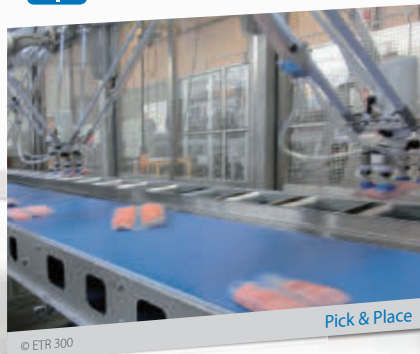
## Vision



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

© ETR 300

- 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

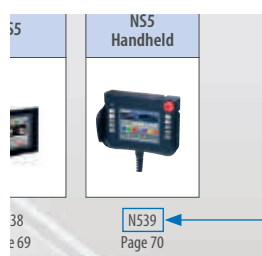
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	96 Motion controllers	112 Servo systems	170 Robots	202 Frequency inverters
Sensing				
	236 Photoelectric sensors	278 Mark and Color sensors	284 Lightcurtains and area sensors	292 Fiber optic sensors and amplifiers
				
	370 Inspection & Ident systems	426 Measurement sensors		
Safety				
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	766 Software			
Software				

# Switching components

## Find information fast!

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*Quick Link*



# Switching components

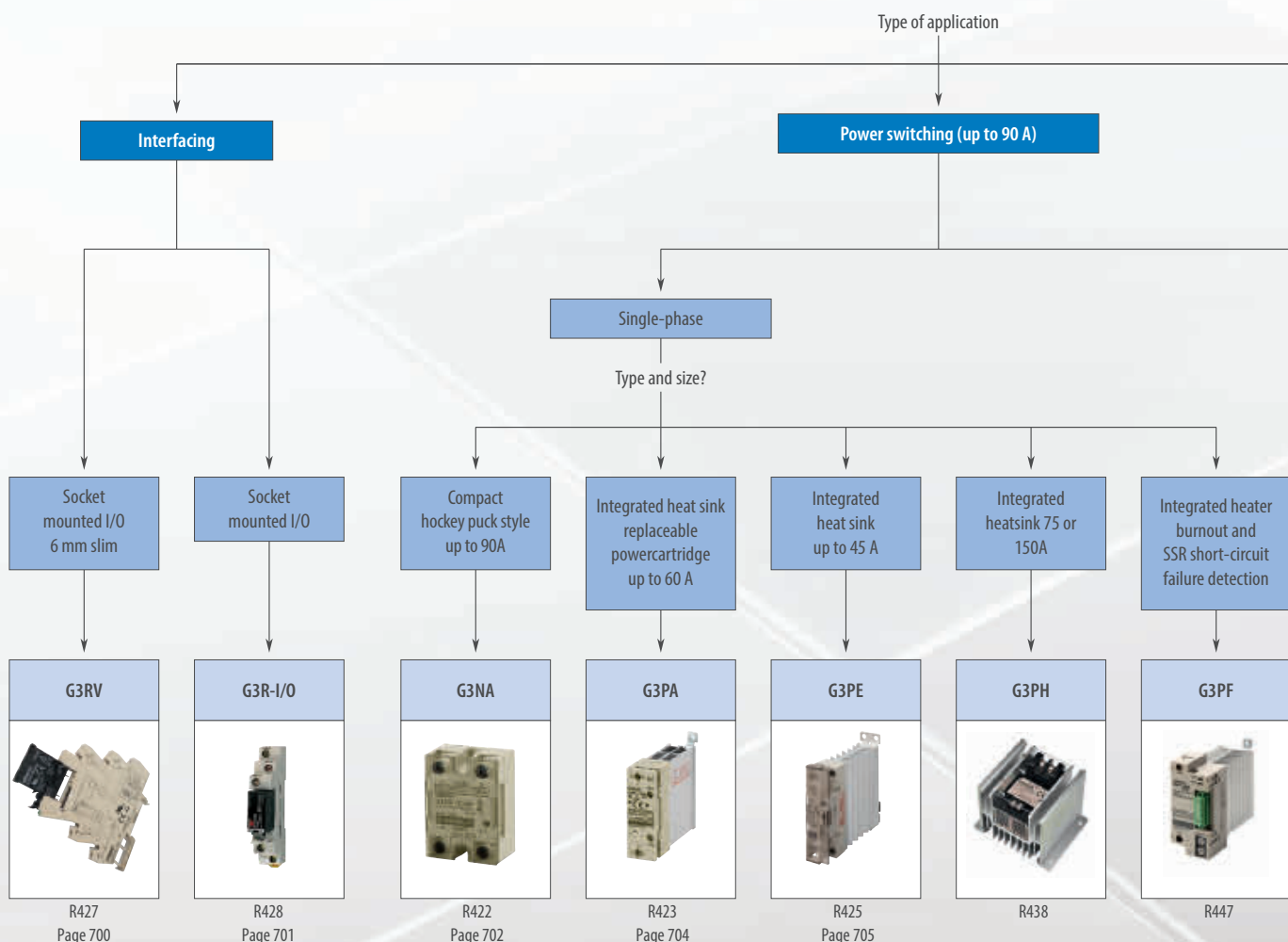
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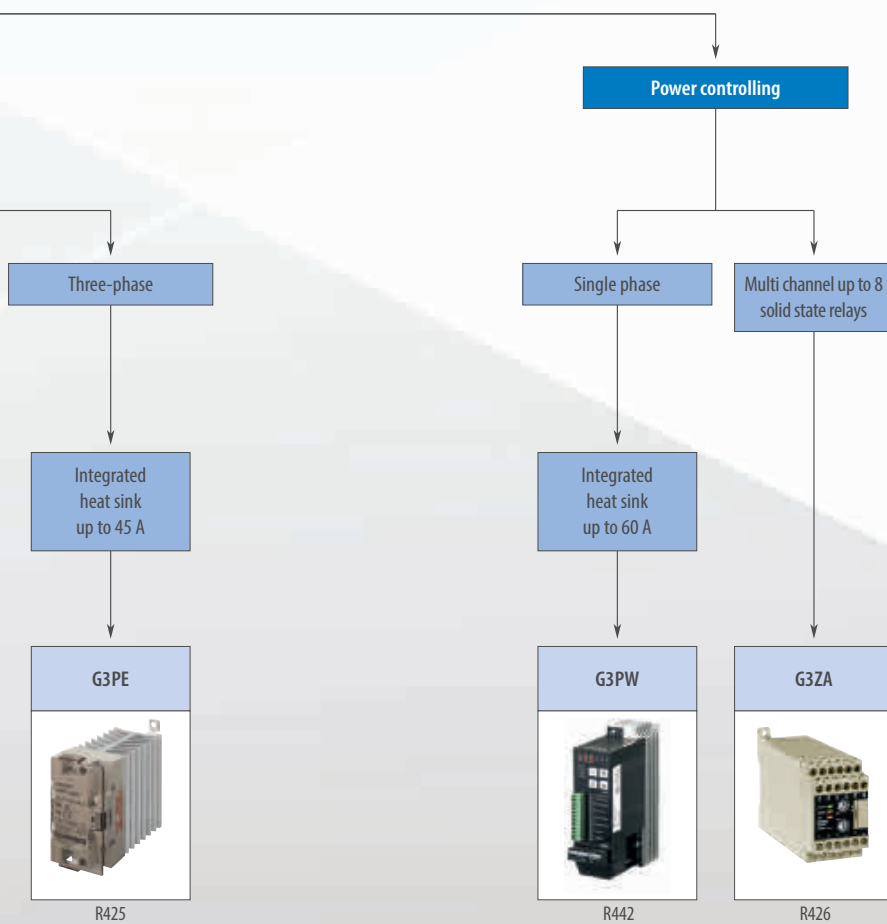
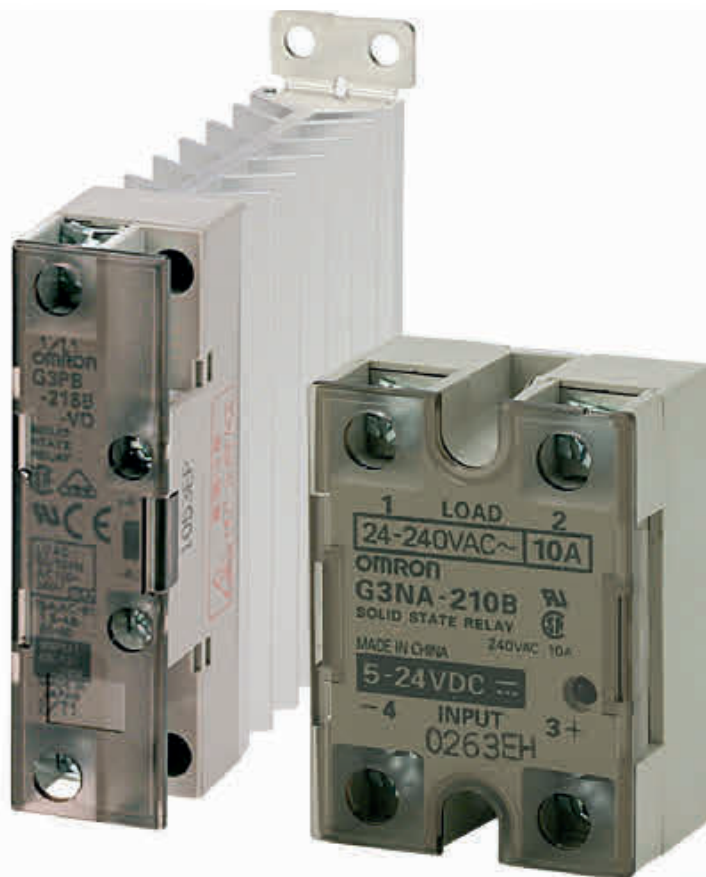
## COMPACT SOLID STATE RELAYS

### G3\_ series – Reliable interfacing and power switching

With a wide variety of output currents and voltages, our control-panel mounted types of power switching SSRs are available with (G3PE & G3PH) and without (G3NA) built-in heat-sink. The compact SSRs for I/O Interfacing G3RV & G3R offer high-speed models (G3R).

- Industrial 6 mm 'slim' SSR which is G2RV compatible (G3RV)
- G2RS compatible high-speed interface solutions (G3R-I/O)
- G3NA with 5-90 A output current, G3PB up to 45 A
- Output voltages up to 480 VAC / 200 VDC available on G3NA
- Effectively absorbing of external surge thanks to the built-in varistor















R425  
Page 705

R442

R426

# Selection table

Category		Control panel mounting type			
					
Model		G3RV	G3R-I/O	G3NA	G3PA
Selection criteria	Type of load	Output module (interface)	Input Module (interface)	Output Module (interface)	Normal resistive heaters Motor control
	1-phase control	–	–	–	■
	2-phase control	–	–	–	–
	3-phase control	–	–	–	–
	Function	Signal switching	Signal switching	Signal switching	Heater control, motor control
	Max. current rating	2 A (AC); 3 A (DC)	100 mA	2 A	90 A
Load voltage/ current [VAC]	24 to 240	–	–	–	■
	100 to 240	■	–	■	–
	200 to 480	–	–	■	■
Load voltage/ current [VDC]	5 to 200	3 to 26.4	4 to 32	■	–
Input voltages [VDC or VAC]	5 to 24 VDC	–	■	■	■
	12 to 24 VDC	12 VDC ±10%; 24 VDC ±10%	■	–	■
	24 VAC	■ 24 VAC/DC ±10%	–	–	■
	100 to 120 VAC	■ 110 VAC ±10%	■	■	–
	200 to 240 VAC	■ 230 VAC ±10%	■	■	–
	Analog input	–	–	–	–
Features	Built-in heat sink	–	–	–	■
	Zero-cross	□	–	□	■
	Built-in varistor	–	–	■	■
	LED operation indicator	■	■	■	■
	Protective cover	NA	NA	■	■
	3-phase loads via 3 single-phase SSRs	NA	NA	■	■
	Replaceable power cartridge	–	–	–	■
	Alarm output	NA	NA	NA	–
	Built-in failure detection	NA	NA	NA	–
	SSR open circuits detection	NA	NA	NA	–
	SSR short circuits detection	NA	NA	NA	–
Mounting	DIN-rail	■	–	■	■
	Screw	–	–	■	■
	Mounting socket	■	■	–	–
Page/Quick Link		700/R427	701/R428	702/R422	704/R423

Control panel mounting type				Power regulator	
					
G3PE	G3PE	G3PH	G3PF	G3PW	G3ZA
Normal resistive heaters	Normal resistive heaters	Normal resistive & lamp heaters	Normal resistors	Alloy heater Pure metal heater, nonmetal heater (Constant-current models recommended.)	Depends on the SSR used Distributes loop/control output levels (mV%) to SSRs
■	–	■	■	■	Depends on the SSR used
–	■	–	–	–	Depends on the SSR used
–	■	–	–	–	Depends on the SSR used
Heater control	Heater control	(Lamp) heater control	Heater control and diagnostics	Single-phase power control	Intelligent power control
45 A	45 A	150 A	35 A	60 A	Depends on the SSR used
–	–	–	–	–	–
■	■	■	■	■	■
■	■	■ (180 to 480)	■	–	■ 400 to 480
–	–	–	–	–	–
–	–	■	–	–	–
■	■	–	■	–	–
–	–	–	–	–	–
–	–	■ (100 to 240 VAC)	–	–	–
–	–	■ (100 to 240 VAC)	–	–	–
–	–	–	–	4 to 20 mA DC, 1 to 5 VDC	–
■	□	■	■	■	–
□	■	□	■	□	–
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–	–	–	–	–	–
705/R425		R438	R447	R442	R426

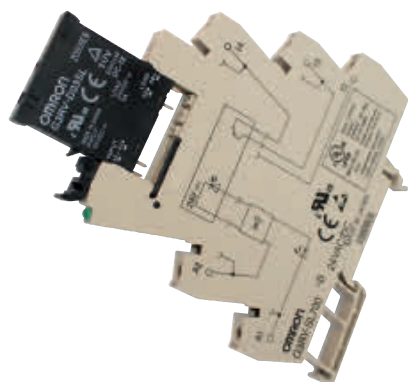
■ Standard

□ Available

– No/not available

NA Not applicable





### Industrial 6 mm “slim” SSR which is G2RV compatible

As well as being slim and thus saving panel space, G3RV relays are very strong, have a large contact area and non-bendable pins. Connection to a PLC is easy and achieved faultlessly in a few seconds via click connectors. In addition, power switching in G3RV relays with DC outputs is managed by a MOSFET in the output, which has ideal heat dissipation characteristics.

- G2RV compatible
- LED indicator built in SSR
- Push-in terminals and accessories for easy wiring

### Ordering information

Zero cross function	Input Rated voltage (operating voltage)	Rated current			Must operate voltage	Must release voltage	Output			Type of connection	Order code
		AC		DC			Rated load voltage (load voltage range)	Load current	Inrush current		
		50 Hz	60Hz								
-	24 VAC/DC (21.6 to 26.4 VAC/DC)	10.7 mA	11.1 mA	4.3 mA	21.6 V	1 V	5 to 24 VDC (3 to 26.4 VDC)	100 µA to 3 A	30 A (60 Hz, 1 cycle)	Screw	G3RV-SL700-D AC/DC24
-	24 VAC/DC (21.6 to 26.4 VAC/DC)	10.7 mA	11.1 mA	4.3 mA	21.6 V	1 V	5 to 24 VDC (3 to 26.4 VDC)	100 µA to 3 A	30 A (60 Hz, 1 cycle)	Push-in	G3RV-SL500-D AC/DC24
Yes	24 VAC/DC (21.6 to 26.4 VAC/DC)	20 mA	21 mA	11 mA	21.6 V	1 V	100 to 240 VAC (75 to 264 VAC)	0.1 A to 2 A	30 A (60 Hz, 1 cycle)	Screw	G3RV-SL700-A AC/DC24
Yes	24 VAC/DC (21.6 to 26.4 VAC/DC)	20 mA	21 mA	11 mA	21.6 V	1 V	100 to 240 VAC (75 to 264 VAC)	0.1 A to 2 A	30 A (60 Hz, 1 cycle)	Push-in	G3RV-SL500-A AC/DC24
-	230 VAC (207 to 253 VAC)	6.8 mA	8.1 mA	-	207 V	1 V	5 to 24 VDC (3 to 26.4 VDC)	100 µA to 3 A	30 A (60 Hz, 1 cycle)	Screw	G3RV-SL700-D AC230
-	230 VAC (207 to 253 VAC)	6.8 mA	8.1 mA	-	207 V	1 V	5 to 24 VDC (3 to 26.4 VDC)	100 µA to 3 A	30 A (60 Hz, 1 cycle)	Push-in	G3RV-SL500-D AC230

Note: Ratings at an ambient temperature of 25°C

### Accessories

Type	Description	Order code
Cross bar	2-pole	P2RVM-020_
Cross bar	3-pole	P2RVM-030_
Cross bar	4-pole	P2RVM-040_
Cross bar	10-pole	P2RVM-100_
Cross bar	20-pole	P2RVM-200_
PLC interface	Connect 8 relays and PLC output	P2RVC-8-O-F
Label	Plastic, for mounting on socket	R99-15 for G2RV
Label (Sticker)	Paper for mounting on socket or relay	R99-16 for G2RV
Separating plate	Provides isolation between adjacent relays to achieve 400 V isolation	P2RV-S

Note: \_ Select color: R=Red, S=Blue, B=Black

### Specifications

Order code		G3RV-SL700/500-A	G3RV-SL700/500-D
Isolation		Triac	Mosfet
Output ON voltage drop		1.6 V rms max.	0.9 V max.
Leakage current		5 mA max. (at 200 VAC 50/60 Hz)	10 µA max. (at 24 VDC)
Operating indicator		Yes	
Ambient temperature	Storage	-30~+100°C (with no icing or condensation)	
	Operating	-30~+55°C (with no icing or condensation)	



### Compact SSR for I/O interface with high dielectric strength requirements

High-speed models with optimum input ratings for a variety of sensors are available, as well as input and output modules that can be used instead of the G2RS. Use a coupler conforming to VDE 0884 and assuring an I/O dielectric strength of 4,000V.

- 1.5 and 2A output current
- 5 to 200VDC/100 to 240VAC output voltages
- Compatible with G2RS electromechanical relays
- DIN-rail mounting via sockets
- Operation indicator to confirm input

## Ordering information

### Input module

Response speed	Input	Input current	Must operate voltage	Must release voltage	Output	Logic level supply current	Size in mm (HxWxD)	Order code
–	Rated voltage (operating voltage)	15 mA max.	60 VAC max.	20 VAC min.	4 to 32 VDC	0.1 to 100 mA	29x13x28 (90.5x16x61 in combination with P2RF-05-E mounting socket)	G3R-IAZR1SN-UTU
High-speed (1 kHz)	5 VDC (4 to 6 VDC)	8 mA max.	4 VDC max.	1 VDC min.				G3R-IDZR1SN-UTU
	12 to 24 VDC (6.6 to 32 VDC)		6.6 VDC max.	3.6 VDC min.				
Low-speed (10 Hz)	5 VDC (4 to 6 VDC)	8 mA max.	4 VDC max.	1 VDC min.				G3R-IDZR1SN-1-UTU
	12 to 24 VDC (6.6 to 32 VDC)		6.6 VDC max.	3.6 VDC min.				

Note: Ratings at an ambient temperature of 25°C

### Output module

Zero cross function	Input				Output					
	Rated voltage (operating voltage)	Input current	Must operate voltage	Must release voltage	Rated load voltage (load voltage range)	Load current <sup>*1</sup>	Inrush current	Size in mm (HxWxD)	Order code	
Yes	5 to 24 VDC (4 to 32 VDC)	15 mA max.	4 VDC max.	1 VDC min.	100 to 240 VAC (75 to 264 VAC)	0.05 to 2 A	30 A (60 Hz, 1 cycle)	29x13x28 (90.5x16x61 in combination with P2RF-05-E mounting socket)	G3R-OA202SZN-UTU	
No										G3R-OA202SLN-UTU
–		8 mA max.			5 to 48 VDC (4 to 60 VDC)	0.01 to 2 A	8 A (10 ms)		G3R-ODX02SN-UTU	
–					48 to 200 VDC (40 to 200 VDC)	0.01 to 1.5 A	8 A (10 ms)		G3R-OD201SN-UTU	

Note: Ratings at an ambient temperature of 25°C

\*1 The minimum current value is measured at 10°C min.

### Socket & accessories

Order code						
DIN rail					PCB	
Screwless clamp					Screw	Soldering
Socket	Clip	Cross bar AC type	Cross bar DC type	Name plate	Socket	Socket
P2RF-05-S	P2CM-S	P2RM-SR	P2RM-SB	R99-11	P2RF-05-E	P2R-05P

## Specifications

	Input module			Output module			
Order code	G3R-IAZR1SN-UTU	G3R-IDZR1SN-UTU	G3R-IDZR1SN-1-UTU	G3R-OA202SZN-UTU	G3R-OA202SLN-UTU	G3R-ODX02SN-UTU	G3R-OD201SN-UTU
Isolation	Photocoupler			Phototriac		Photocoupler	
Operate time	20 ms max.	0.1 ms max.	15 ms max.	1/2 of load power source cycle + 1 ms max.	1 ms max.	1 ms max.	1 ms max.
Release time	20 ms max.	0.1 ms max.	15 ms max.	1/2 of load power source cycle + 1 ms max.	2 ms max.	2 ms max.	2 ms max.
Response frequency	10 Hz	1 kHz	10 Hz	20 Hz	20 Hz	100 Hz	100 Hz
Output ON voltage drop	1.6 V max.	1.6 V max.	1.6 V max.	1.6 V max.	1.6 V max.	1.6 V max.	2.5 V max.
Leakage current	5 µA max.	5 µA max.	5 µA max.	1.5 mA max.	1.5 mA max.	1 mA max.	1 mA max.
Operation indicator	Yes						
Ambient temperature	Operating: -30 to 80°C (with no icing)						



### Hockey puck style SSR with 5-90 A output currents

All models feature the same compact dimensions to provide a uniform mounting pitch. A built-in varistor effectively absorbs external surges. The operation indicator enables monitoring operation.

- 5-90 A output current
- 24-480 VAC/5-200VDC output voltages
- Built-in varistor
- Operation indicator (red LED)
- Protective cover for greater safety

### Ordering information

Applicable output load		Zero cross function	Isolation	Rated input voltage	Must operate voltage	Must release voltage	Load current with/without heatsink at 40 °C	Size in mm (H×W×D)	Order code	
24 to 240 VAC	5 A	Yes	Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 5 A/0.1 to 3 A	58×43×27	G3NA-205B-UTU DC5-24	
			Photocoupler	100 to 120 VAC	75 VAC max.	20 VAC min.			G3NA-205B-UTU AC100-120	
				200 to 240 VAC	150 VAC max.	40 VAC min.			G3NA-205B-UTU AC200-240	
	10 A		Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 10 A/0.1 to 4 A	58×43×27	G3NA-210B-UTU DC5-24	
			Photocoupler	100 to 120 VAC	75 VAC max.	20 VAC min.			G3NA-210B-UTU AC100-120	
				200 to 240 VAC	150 VAC max.	40 VAC min.			G3NA-210B-UTU AC200-240	
	20 A		Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 20 A/0.1 to 4 A	58×43×27	G3NA-220B-UTU DC5-24	
			Photocoupler	100 to 120 VAC	75 VAC max.	20 VAC min.			G3NA-220B-UTU AC100-120	
				200 to 240 VAC	150 VAC max.	40 VAC min.			G3NA-220B-UTU AC200-240	
	40 A		Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 40 A/0.1 to 6 A	58×43×27	G3NA-240B-UTU DC5-24	
			Photocoupler	100 to 120 VAC	75 VAC max.	20 VAC min.			G3NA-240B-UTU AC100-120	
				200 to 240 VAC	150 VAC max.	40 VAC min.			G3NA-240B-UTU AC200-240	
	50 A		Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 50 A/0.1 to 6 A	58×43×27	G3NA-250B-UTU DC5-24	
			Photocoupler	100 to 120 VAC	75 VAC max.	20 VAC min.			G3NA-250B-UTU AC100-120	
				200 to 240 VAC	150 VAC max.	40 VAC min.			G3NA-250B-UTU AC200-240	
	75 A		Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	1 to 75 A/1 to 7 A	58×43×30	G3NA-275B-UTU-2 DC5-24	
			Photocoupler	100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-275B-UTU-2 AC100-240	
			90 A	Phototriac	5 to 24 VDC	4 VDC max.	1 VDC min.	1 to 90 A/1 to 7 A	58×43×30	G3NA-290B-UTU-2 DC5-24
	Photocoupler			100 to 240 VAC	75 VAC max.	20 VAC min.	G3NA-290B-UTU-2 AC100-240			
5 to 200 VDC	10 A	No	Photocoupler	5 to 24 VDC	4 VDC max.	1 VDC min.	0.1 to 10 A/0.1 to 4 A	58×43×27	G3NA-D210B-UTU DC5-24	
200 to 480 VAC	10 A	Yes		100 to 240 VAC	75 VAC max.	20 VAC min.	0.1 to 10 A/0.1 to 4 A	58×43×27	G3NA-D210B-UTU AC100-240	
				5 to 24 VDC	4 VDC max.	1 VDC min.			G3NA-410B-UTU DC5-24	
				100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-410B-UTU AC100-240	
	25 A			5 to 24 VDC	4 VDC max.	1 VDC min.	0.2 to 20 A/0.2 to 4 A	58×43×27	G3NA-425B-UTU-2 DC5-24	
				100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-425B-UTU-2 AC100-240	
	50 A			5 to 24 VDC	4 VDC max.	1 VDC min.	0.2 to 40 A/0.2 to 6 A	58×43×30	G3NA-450B-UTU-2 DC5-24	
				100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-450B-UTU-2 AC100-240	
	75 A			5 to 24 VDC	4 VDC max.	1 VDC min.	1 to 75 A/1 to 7 A	58×43×30	G3NA-475B-UTU-2 DC5-24	
				100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-475B-UTU-2 AC100-240	
	90 A			5 to 24 VDC	4 VDC max.	1 VDC min.	1 to 90 A/1 to 7 A	58×43×30	G3NA-490B-UTU-2 DC5-24	
				100 to 240 VAC	75 VAC max.	20 VAC min.			G3NA-490B-UTU-2 AC100-240	

### Accessories

Name	Applicable SSRs	Size in mm (H×W×D) <sup>*1</sup>	Order code
One-touch mounting plates	–	NA	R99-12 FOR G3NA
Mounting bracket	G3NA-240B-UTU	NA	R99-11 FOR G3NA
Slim heat sink enabling DIN-rail mounting	G3NA-205B-UTU, G3NA-210B-UTU, G3NA-D210B-UTU, G3NA-410B-UTU	100×47×51	Y92B-N50
	G3NA-220B-UTU, G3NA-425B-UTU(-2)	100×75×100	Y92B-N100
	G3NA-240B-UTU, G3NA-250B-UTU	100×104×100	Y92B-N150
	G3NA-450B-UTU(-2)	190.5×130.5×100	Y92B-P250
	G3NA-275B-UTU(-2), G3NA-290B-UTU(-2), G3NA-475B-UTU(-2), G3NA-490B-UTU(-2)	172×110×150	Y92B-P250NF
	G3NA-205B-UTU, G3NA-210B-UTU, G3NA-D210B-UTU, G3NA-220B-UTU, G3NA-410B-UTU, G3NA-425B-UTU(-2)	100×102×60	Y92B-A100
Low-cost heat sink	G3NA-240-B-UTU	150×102×60	Y92B-A150N

<sup>\*1</sup> Size includes heat sink + G3NA SSR

Specifications

Operating voltage range	5 to 24 VDC; 4 to 32 VDC 100 to 120 VAC; 75 to 132 VAC 200 to 240 VAC; 150 to 264 VAC
Output ON voltage drop	G3NA-2: 1.6 V (RMS) max. G3NA-4: 1.8 V (RMS) max. G3NA-D2: 1.5 V max.
Leakage current	5 mA (100 V)/10 mA (200 V) G3NA-D2: 5 mA max. (200 VDC)
Load voltage range	200 to 480 VAC; 180 to 528 VAC 24 to 240 VAC; 19 to 264 VAC 5 to 200 VDC; 4 to 220 VDC
Ambient temperature	Operating: -30 to 80°C
Operate & release time	1/2 of load power source cycle + 1 ms max. (DC input) 1/2 of load power source cycle + 1 ms max. (DC input)
G3NA-D2	1 ms max. (DC input; release 5 ms), 30 ms max. (AC input)



### Solid State Relays with exchangeable power cartridge

Optimum design of the heat sink has contributed to the downsizing of this product. The power element cartridges of the G3PA are easily replaceable for easy maintenance. G3PA can be mounted on a DIN-rail or using screws.

- 10-60 A output current
- 24-480 VAC output voltages
- Applicable with 3-phase loads
- Replaceable power element cartridges

### Ordering information

Rated output load		Zero cross function	Rated input voltage	Operating voltage range	Input current impedance	Voltage level		Size in mm (H×W×D)	Order code
						Must operate voltage	Must release voltage		
24 to 240 VAC	10 A	Yes	5 to 24 VDC	4 to 30 VDC	7 mA max.	4 VDC max.	1 VDC min.	100×27×100	G3PA-210B-VD DC5-24
	20 A							100×37×100	G3PA-220B-VD DC5-24
	40 A							100×47×100	G3PA-240B-VD DC5-24
	60 A							100×110×100	G3PA-260B-VD DC5-24
	10 A		24 VAC	19.2 to 26.4 VAC	1.4 kΩ ±20%	19.2 VAC max.	4.8 VAC min.	100×27×100	G3PA-210B-VD AC24
	20 A							100×37×100	G3PA-220B-VD AC24
	40 A							100×47×100	G3PA-240B-VD AC24
	60 A							100×110×100	G3PA-260B-VD AC24
180 to 400 VAC	20 A	Yes	12 to 24 VDC	9.6 to 30 VDC	7 mA max.	9.2 VDC max.	1 VDC min.	100×37×100	G3PA-420B-VD DC12-24
	30 A							100×47×100	G3PA-430B-VD DC12-24
200 to 480 VAC	20 A							100×37×100	G3PA-420B-VD-2 DC12-24
	30 A							100×47×100	G3PA-430B-VD-2 DC12-24
	50 A							100×110×100	G3PA-450B-VD-2 DC12-24

### Accessories

Replacement parts: Power device cartridges			
Load voltage range	Carry current	Applicable SSR	Order code
19 to 264 VAC	10 A	G3PA-210B-VD DC5-24	G32A-A10-VD DC5-24
		G3PA-210B-VD AC24	G32A-A10-VD AC24
	20 A	G3PA-220B-VD DC5-24	G32A-A20-VD DC5-24
		G3PA-220B-VD AC24	G32A-A20-VD AC24
	40 A	G3PA-240B-VD DC5-24	G32A-A40-VD DC5-24
		G3PA-240B-VD AC24	G32A-A40-VD AC24
	60 A	G3PA-260B-VD DC5-24	G32A-A60-VD DC5-24
		G3PA-260B-VD AC24	G32A-A60-VD AC24
150 to 440 VAC	20 A	G3PA-420B-VD DC12-24	G32A-A420-VD DC12-24
	30 A	G3PA-430B-VD DC12-24	G32A-A430-VD DC12-24
180 to 528 VAC	20 A	G3PA-420B-VD-2 DC12-24	G32A-A420-VD-2 DC12-24
	30 A	G3PA-430B-VD-2 DC12-24	G32A-A430-VD-2 DC12-24
	50 A	G3PA-450B-VD-2 DC12-24	G32A-A450-VD-2 DC12-24

G32A-D_ _ enables 2 line switching of 3 phase configurations		
Current flow	Applicable SSR	Order code
10 A	G3PA-210B-VD, G3PA-210BL-VD, G3PA-220B-VD, G3PA-220BL-VD, G3PA-420B-VD, G3PA-420BL-VD-2	G32A-D20
20 A		
30 A	G3PA-430B-VD, G3PA-430BL-VD-2, G3PA-240B-VD, G3PA-240BL-VD	G32A-D40
40 A		

### Specifications

Isolation	Phototriac coupler
Indicator	Yes
Ambient temperature	Operating: -30 to 80°C
Load voltage range	200 to 480 VAC: 180 to 528 VAC 24 to 240 VAC: 19 to 264 VAC 180 to 400 VAC: 150 to 440 VAC
Output ON drop	1.6 V (RMS) max.
Operate time	0.5 of load power source cycle + 1 ms max. (DC input, -B models) 1.5 of load power source cycle + 1 ms max. (AC input) 1 ms max. (-BL models)
Release time	0.5 of load power source cycle + 1 ms max. (DC input) 1.5 of load power source cycle + 1 ms max. (AC input)





### Omron's G3PE compact industrial SSR with outstanding surge endurance

The G3PE features an original surge-pass circuit that gives outstanding surge endurance and protects the semiconductor device against voltages in excess of 30 kV.

- Single and three phase, 15–45 A output current
- 100–240 VAC and 200–480 VAC output voltages
- Models available without zero cross
- Improved surge dielectric strength for output circuits
- Terminal cover with finger protection
- Mount to DIN track or with screws

### Ordering information

Phases	Rated voltage (operating voltage)	Rated output load	Permissible $I^2t$ (half 60 Hz wave)	Applicable heater capacity AC1: resistive load	Size in mm (H×W×D)	Number of poles	Order code
1	100 to 240 VAC (75 to 264 VAC)	15 A (at 40°C)	121 A <sup>2</sup> s	3 kW (at 200 VAC)	100×22.5×100	1	G3PE-215B DC12-24
		25 A (at 40°C)	260 A <sup>2</sup> s	5 kW (at 200 VAC)		1	G3PE-225B DC12-24
		35 A	1,260 A <sup>2</sup> s	7 kW (at 200 VAC)	100×44.5×100	1	G3PE-235B DC12-24
		45 A		9 kW (at 200 VAC)		1	G3PE-245B DC12-24
	200 to 480 VAC (180 to 528 VAC)	15 A (at 40°C)	128 A <sup>2</sup> s	6 kW (at 400 VAC)	100×22.5×100	1	G3PE-515B DC12-24
		25 A (at 40°C)	1,350 A <sup>2</sup> s	10 kW (at 400 VAC)		1	G3PE-525B DC12-24
		35 A		14 kW (at 400 VAC)	100×44.5×100	1	G3PE-535B DC12-24
		45 A	6,600 A <sup>2</sup> s	18 kW (at 400 VAC)		1	G3PE-545B DC12-24
3	200 to 480 VAC (180 to 528 VAC)	15 A (at 40°C)	260 A <sup>2</sup> s	12.5 kW (at 480 VAC)	100×80×155	3	G3PE-515B-3N DC12-24
						2	G3PE-515B-2N DC12-24
		25 A (at 40°C)		20.7 kW (at 480 VAC)	120×80×155	3	G3PE-525B-3N DC12-24
					100×80×155	2	G3PE-525B-2N DC12-24
		35 A	1,260 A <sup>2</sup> s	29 kW (at 480 VAC)	140×80×155	3	G3PE-535B-3N DC12-24
					120×80×155	2	G3PE-535B-2N DC12-24
		45 A		37.4 kW (at 480 VAC)	140×110×155	3	G3PE-545B-3N DC12-24
					140×80×155	2	G3PE-545B-2N DC12-24

### Specifications

Rated input voltage	12 to 24 VDC
Operating voltage range	9.6 to 30 VDC
Rated input current (impedance)	7 mA max. (zero cross models); 15 mA max. (models without zero cross)
Zero cross function	Yes
Must operate voltage	9.6 VDC max.
Must release voltage	1 VDC min.
Isolation method	Phototriac coupler
Operation indicator	Yes (yellow)
Load voltage range	200 to 480 VAC models: 180 to 528 VAC 100 to 240 VAC models: 75 to 264 VAC
Operate time	1/2 of load power source cycle +1 ms max.
Release time	1/2 of load power source cycle +1 ms max.
Leakage current	10 mA (at 200 VAC)
Ambient temperature	Operating: –30 to 80°C