

New PCB Power Relay Introduction

G5PZ-1A4-E 20A Sealed PCB Relay

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Main spec and features

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◆Compact & High Current

Compact and slim size, 20A High switching capacity
Contributes to downsizing of high capacity equipment.



◆Saving Energy

Low coil power consumption of 530mW in 20A class of relays.

◆Safety

IEC/EN60079-15 conformed for explosion-proof with sealed



Background: Air-con equipment redesigned to use flammable refrigerants to reduce environmental impact

New

	G5PZ-1A-E	G5PZ-1A4-E
Enclosure	Flux protection	Sealed
Contact form	SPST-NO (1a)	SPST-NO (1a)
Coil power consumption	Approx. 530mW	Approx. 530mW
Electrical life (resistive load)	Min. 50Kops @250VAC, 20A(1sON/9sOFF)	Min. 20Kops @250VAC, 20A (1sON/9sOFF)
Electrical life (Inverter load) For reference	Min. 50Kops 250V/125V AC High Inrush : 240A (0-P, rise time 3ms or more) Carry current : 20A(RMS) Cut off current : 0A	Min. 50Kops 250V/125V AC High Inrush : 240A (0-P, rise time 3ms or more) Carry current : 20A(RMS) Cut off current : 0A
Safety standard	UL/CSA/TUV/CQC	UL/CSA/TUV/CQC IEC60079-15 Ex-proof
Rated load	AC277V, 20A, Resistive 50,000 cycles @70deg	AC277V, 20A, Resistive 6,000 cycles @70deg

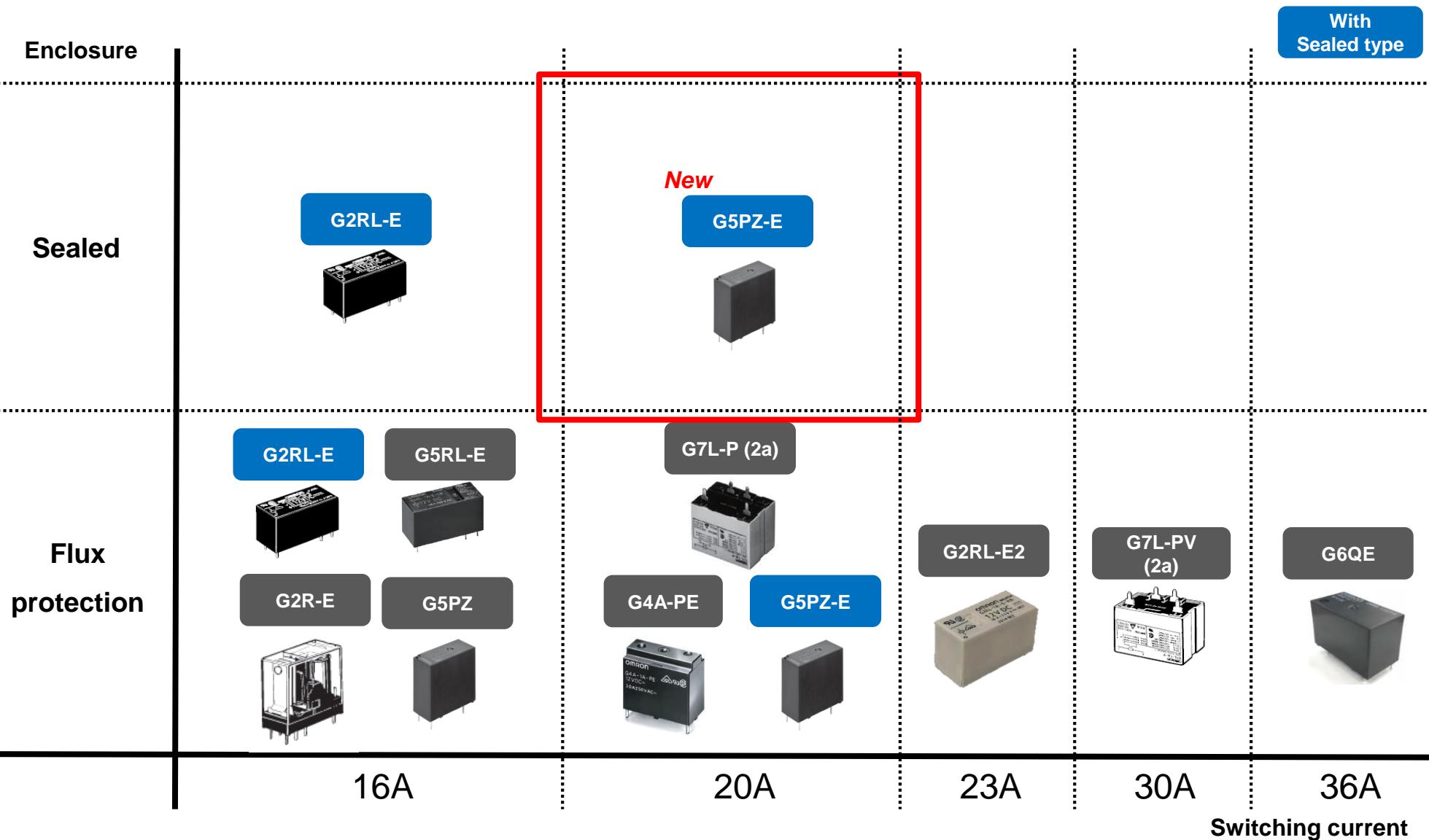
Differences between flux-protection and fully-sealed

Enclosure	Features	Washing	Coating	Dust/Gas	E-LIFE
Flux protection	Protection against dust	non-available	non-available	Dust: Some protection (No large dust or dirt particles inside Relay.) Gas: no protection	Longer
Sealed	Structure that helps prevent the penetration of flux during soldering and solvent during cleaning	available	available *Epoxy/Urethane are non-available	Dust: OK Gas: OK not available Silicone, Sulfuric, or Organic Gas	1-10A: Longer 10-16A : Medium 16A or more : Shorter

Sealed type power relay lineup

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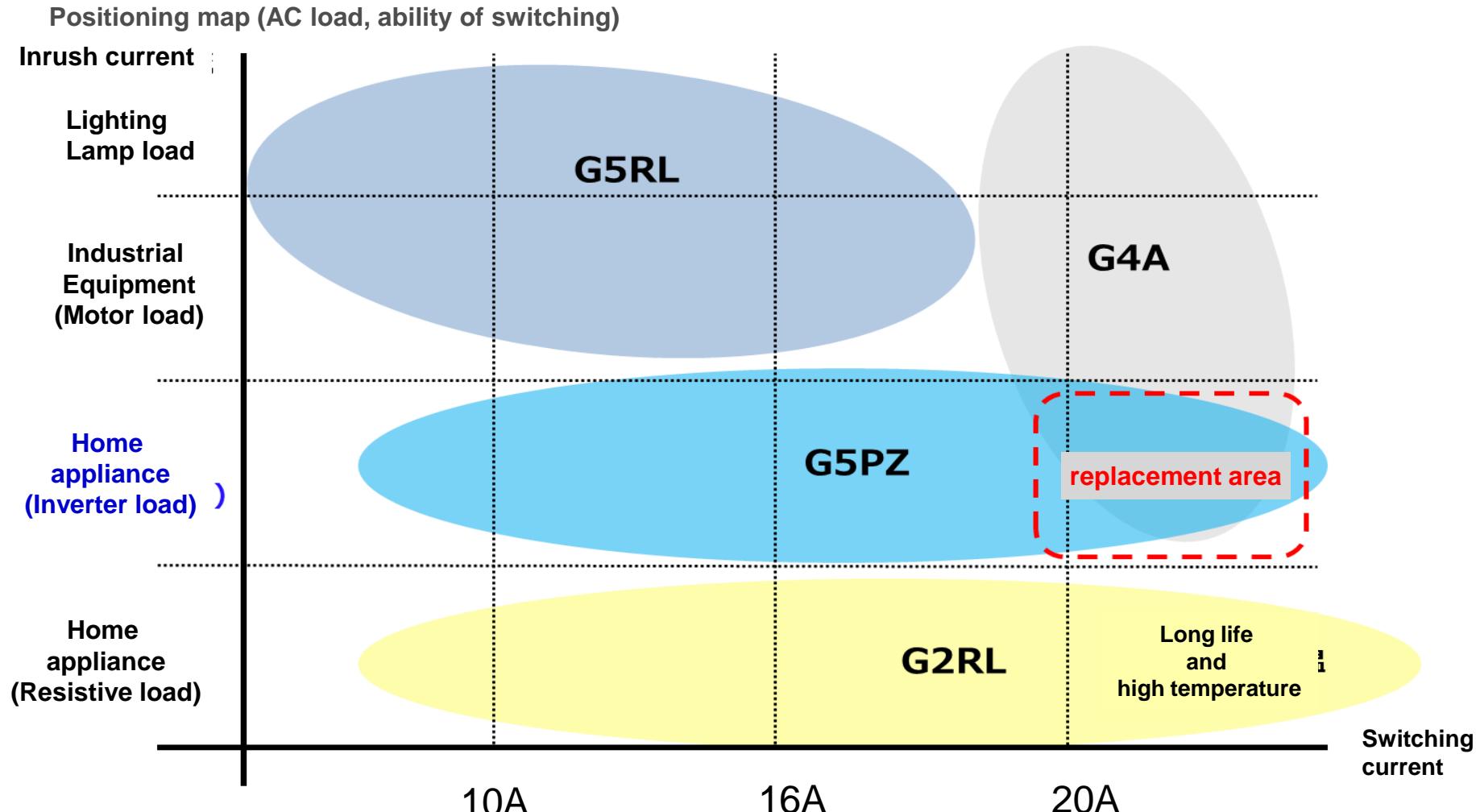
New G5PZ sealed type to cover 20A switching.



G5PZ Product positioning in 16A-20A Relay **OMRON**

Omron lineup can cover wide range applications.

Lamp, Motor >>>G5RL/G4A Inverter>>>G5PZ Resistive/High temp. >>>G2RL



G5PZ sealed type has passed the explosion proof safety standard (IEC/EN) 60079-15, as well as 60335-2-40 standard for air conditioners and heat pumps.

Safety standard for HA products

Equipment
standard

IEC 60335-1

Household and similar electrical appliances - Safety

Safety standard for air conditioners and heat pumps

Equipment
standard

IEC 60335-2-40

Particular requirements
for electrical heat pumps,
air-conditioners and dehumidifiers

 <Relay-related content>

Relays shall not be considered sources of ignition when complying
with IEC 60079-15 clauses 16-22 for Group IIA gases or refrigerants used.

Safety standard for electronic components include relay

Explosion proof

IEC 60079-15

Explosive atmospheres - Part 15:
Equipment protection by type of protection "n"

G5PZ can support 16~20A class application

<Application Trend and Needs>

Down sizing and High density mounting >>> Small size of G5PZ

Increasing current of heater/Motor >>> 20A switching of G5PZ

Saving energy >>> Low coil consumption of G5PZ

Changing to combustible refrigerant >>> Sealed and Explosion protection proof

<Values>

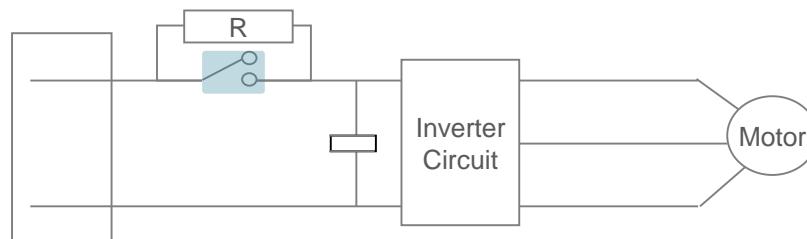
【Example】

- HA (AirCon/Ref/WM)
- Multi-Printer
- FA (Inverter/Servo)
- Power supply

【Relay function】

- Heater switching
- Motor/Valve switching
- Power supply, Inverter switching

Bypass relay



Target application (sealed / explosion-proof)

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Obligation to reduce fluorocarbon emissions. The following equipment are targets.

HA · BA



Home refrigerator
Commercial refrigerator
Ice Maker



Heat pump water heater



Refrigerated Showcase
Frozen Showcase
Refrigeration and frozen unit



Home air conditioner
Packaged air conditioner



Beer dispenser



Water dispenser
(Chiller)

FA



Thermo-chiller

For the reduction of fluorocarbon
Review of refrigerants and electronic components.
Chance to design-in !

Thank You

