

CARLO GAVAZZI
Automation Components



Limit & Safety Switches

General Purpose
Pre-wired
Safety



Switch



Limit Switches

Carlo Gavazzi broadens its leading range of products for the industrial automation world, with the new and complete range of mechanical limit and safety switches.

These robust switches provide machine manufacturers and panel builders with a global and comprehensive solution to their switching needs. With their complete conformity to the most demanding regulations, machines are allowed to operate properly and therefore machine downtime and personnel risk are minimized.



**User
Friendly**



**Long Term
Reliability**



**Cost
Saving**



**Diagnostic
Warning**

Contact Blocks and Actuators

With ten different contact blocks, most of them with positive opening safety contacts (IEC 60947-5-1) including slide, slide overlapping, and snap acting, coupled with over 60 different actuating heads and levers, over 8,000 different combinations of limit and safety switches are possible. This covers almost every possible industrial automation application, as well as most elevator and door applications.

Housings

Four different housing sizes, with five different cable entry types (1/2" NPT, PG11, PG13.5, M16, and M20) provide the flexibility needed to address most application requirements. And where compact size and fast wiring are desired, two additional housing types with pre-wired cable are available. Most of the switches are available with a choice of double-insulated thermoplastic or metal housing.

A wide operating temperature range of -13° to $+158^{\circ}\text{F}$ (-30° to $+80^{\circ}\text{C}$), along with enclosure ratings of up to IP67, enable the use of the switches in harsh-duty environments.

Safety Switches

Safety switches are available in four categories – key interlock, shaft lever, pull wire, or manual reset. Key interlock types feature five different head positions, and allow linear or radial operation with a small pivot radius. Shaft lever switches offer two connection options (lever or pin), allowing hinge operation. Pull wire types, with and without reset for emergency stop, can be used on long distances (up to 25m), which are typically found on conveyors. Manual reset switches feature a pull button to reset the switch after it has been activated, typically used for machine over-travel detection.

Actuators

PS 21 L-N S11 PO-M 00

For Limit Switches

For Safety Switches

Plunger Type		Lever Type		Safety Type	
P0	Metal plain PLUNGER for all body types	RT	Roller LEVER for all body types	05	Key operated 90° adjustable head: PSxxS
P01	Metal plain PLUNGER with fixing nuts: PSxxM	BR	Roller internal or external bent LEVER: PS21L PS42L	09	Fully turnable head: PS21S PS42S
PH	Metal plain PLUNGER with dust protection cup: PS21L PS31L PS42L PSxxM	BE		HC	Zinc plated steel lever: PS21H PS42H
PR1	Metal roller PLUNGER with fixing nuts: PSxxM	W0	LEVER with rubber roller Ø50: PS21L PS31L PS42L PS43L	HZ	Zinc plated steel shaft
PR	Roller PLUNGER for all body types	R1	Adjustable LEVER with nylon roller: PS21L PS31L PS42L PS43L	HS	Stainless steel shaft: PS21H
P91	Metal cross roller PLUNGER with fixing nuts: PSxxM	W1	Adjustable LEVER with rubber roller Ø50: PS21L PS31L PS42L PS43L	N6	Pull action with ring (25N): PS21R PS42R
RH	Plastic roller lever on metal PLUNGER (left side): PS21L PS31L PS42L PS43L	LA2	Adjustable rod LEVER (170mm): PS21L PS31L PS42L PS43L	N7	Pull wire without reset for simple stop: PSxxR
RJ	Plastic roller lever on metal PLUNGER with dust protection cup (left side): PS21L PS31L PS42L	LG3		N7 ⁴	Pull wire with reset for emergency stop
RV	Plastic roller lever on metal PLUNGER (right side): PS21L	Shaft Type		With Pull Button Reset	
RW	Plastic roller lever on metal PLUNGER with dust protection cup (right side): PS21L	LS	Stainless steel spring multidirectional actuator (117mm): PS21L PS31L PS42L PS43L PSxxM	P0	Steel plunger: PS21K PS42K
LR	Adjustable plastic roller lever on metal PLUNGER (left side): PS21L PS42L PS42K	LP	Multidirectional nylon actuator with stainless steel spring (115mm): PS21L PS31L PS42L PS43L PSxxM	PR	Steel plunger with nylon roller: PS21K PS42K
		LW	Stainless steel spring multidirectional actuator (cat whisker - 135mm): PS21L PS31L PS42L PS43L PSxxM	R3	Steel plunger with nylon roller: PS21K PS42K
				LR	Steel plunger with nylon roller: PS42K
				RT	Lever with nylon roller: PS21K PS42K

1 - With 0L code on options. 2 - Stainless steel rod Ø3. 3 - Fiberglass rod Ø6 4 - With K0 code on options. To instantly view a data sheet and specify products, visit www.GavazziOnline.com



Limit Switch - Limit Type Plastic Body

- Double Insulation
- Degree of protection IP65
- Reinforced UL-V0 thermoplastic fiber-glass body
- Positive Opening Operation \Rightarrow
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current $I_{th} = 10A$
- Rated insulation voltage $U_i = 500V$
- UL, CSA
- Conforms with IEC 947-5-1 (EN 60947-5-1)

Body

PS 21 L-N S11 PO-T 00



PS21
width 30mm
(fixing points 20/22mm)
1 cable inlet

PS42
width 50mm
(fixing points 40/42mm)
2 cable inlet

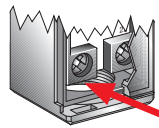
PS31
width 40mm
(fixing points 30mm)
1 cable inlet

(1) L = General Purpose



Cable Gland

PS 21 L-NS11 PO-T 00



- P** = cable inlet PG13.5 cable gland
- B** = cable inlet PG11 cable gland
- M** = cable inlet M20x1.5 cable gland
- A** = cable inlet M16x1.5 cable gland
- N** = cable inlet 1/2" NPT cable gland

Contact Block

PS 21 L-NS11 PO-T 00

For all body types

S11	1NO + 1NC Snap Action Contacts	21-22 13-14 21-22 13-14
T11	1NO + 1NC Non overlapping Slow Action Contacts	21-22 13-14
011	1NO + 1NC Overlapping Slow Action Contacts	21-22 13-14
T02	2NC Slow Action Contacts	11-12 21-22
T20	2NO Slow Action Contacts	13-14 23-24
S02	2NC Snap Action Contacts	11-12 21-22 11-12 21-22

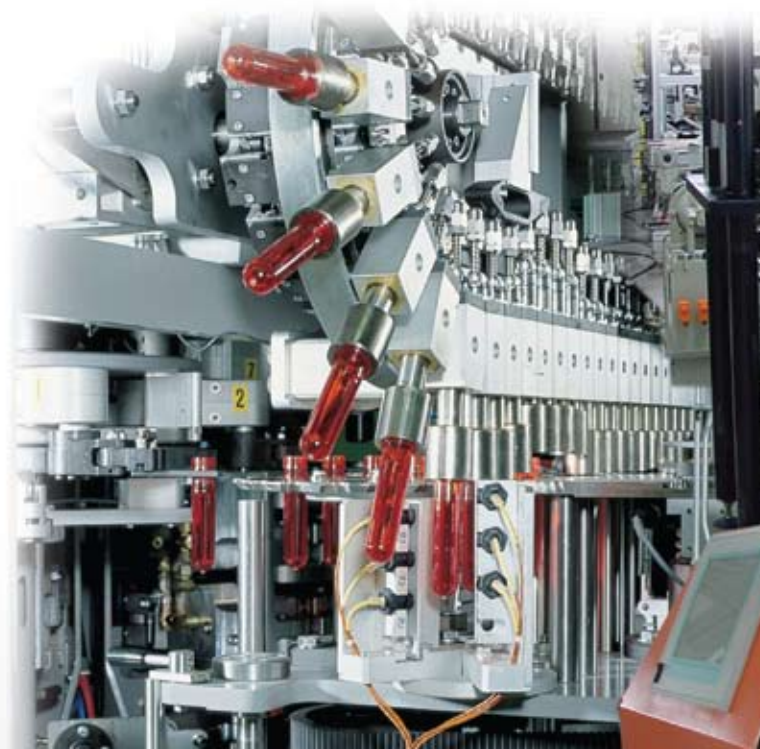
Only for PS31

T12	1NO + 2NC Non overlapping Slow Action Contacts	21-22 13-14 21-22 13-14
T21	2NO + 1NC Non overlapping Slow Action Contacts	11-12 13-14 23-24
T03	3NC Simultaneous Slow Action Contacts	11-12 21-22 11-12 21-22
T30	3NO Simultaneous Slow Action Contacts	13-14 23-24 13-14 23-24

To instantly view a data sheet and specify products, visit www.GavazziOnline.com

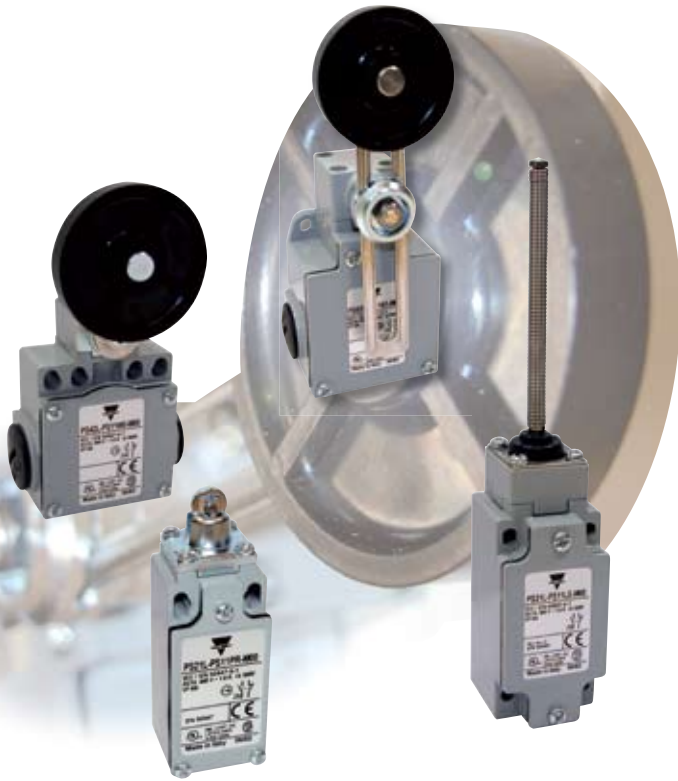
Specifications are subject to change without notice.

For requests about special features and/or customization, please contact your closest sales office.



Limit Switches

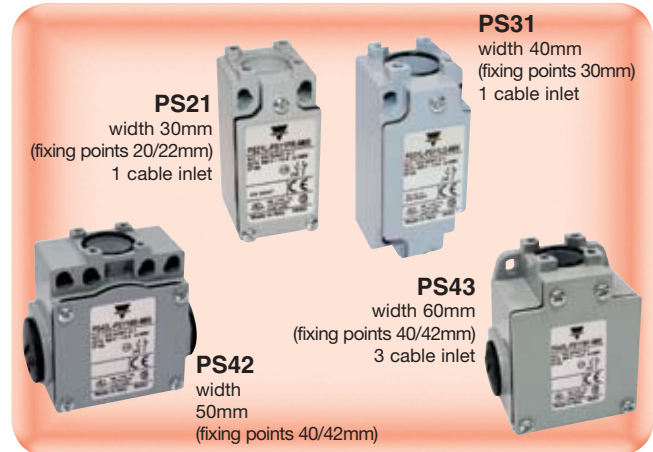
Limit Switch - Limit Type Metal Body



- High mechanical resistance
- Degree of protection IP66
- Zinc alloy (Zamack) or aluminium body
- Positive Opening Operation ⊕
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current Ith = 10A
- Rated insulation voltage Ui = 500V
- UL, CSA
- Conforms with IEC 947-5-1 (EN 60947-5-1)

Body

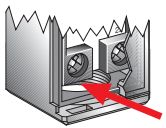
PS 21 L-N S11 PO-M 00



(1)L = General Purpose

Cable Gland

PS 21 L-N S11 PO-M 00



- P = cable inlet PG13.5 cable gland
- B = cable inlet PG11 cable gland
- M = cable inlet M20x1.5 cable gland
- A = cable inlet M16x1.5 cable gland
- N = cable inlet 1/2" NPT cable gland

Contact Block

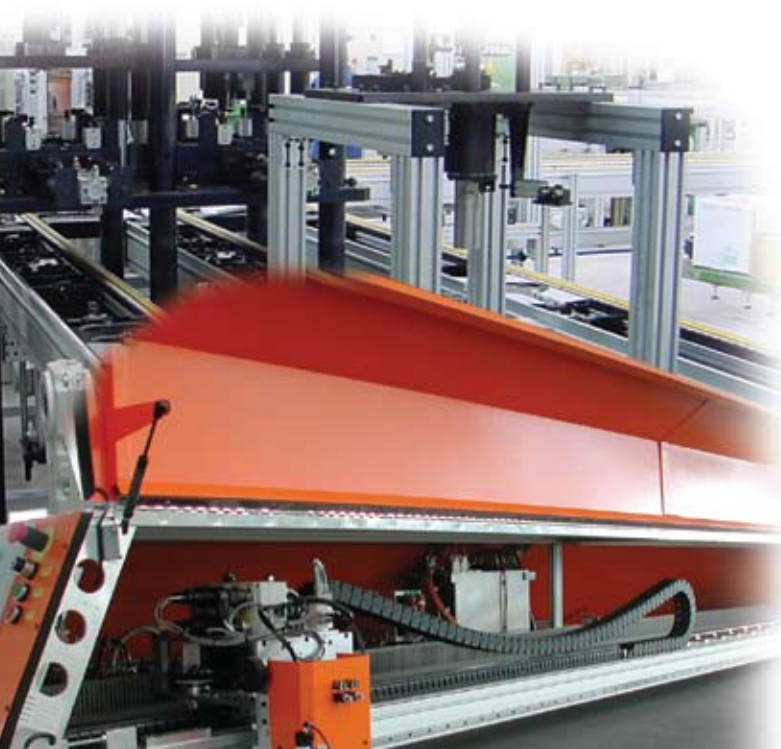
PS 21 L-N S11 PO-M 00

For all body types

S11	1NO + 1NC Snap Action Contacts	21-22 13-14 21-22 13-14
T11	1NO + 1NC Non overlapping Slow Action Contacts	21-22 13-14
O11	1NO + 1NC Overlapping Slow Action Contacts	21-22 13-14
T02	2NC Slow Action Contacts	11-12 21-22
T20	2NO Slow Action Contacts	13-14 23-24
S02	2NC Snap Action Contacts	11-12 21-22 11-12 21-22

Only for PS31

T12	1NO + 2NC Non overlapping Slow Action Contacts	21-22 31-32 13-14
T21	2NO + 1NC Non overlapping Slow Action Contacts	21-22 31-32 3-24
T03	3NC Simultaneous Slow Action Contacts	11-12 21-22 31-32
T30	3NO Simultaneous Slow Action Contacts	13-14 23-24 3-24



Limit Switch - Prewired Type Plastic and Metal Body

- Double Insulation \square (for thermoplastic type)
- Sealed with epoxy resin at the base of the box
- Degree of protection IP67
- Thermoplastic material or diecast zinc alloy body
- Positive Opening Operation \rightarrow
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current Ith = 10A
- Rated insulation voltage Ui = 500V
- UL, CSA
- Conforms with IEC 947-5-1 (EN 60947-5-1)

Body

PS 21 M⁽¹⁾-U S11 PO-T⁽²⁾ 00



(1) M = Miniature

(2) M = Metal

T = Thermoplastic



Contact Block

PS 21 M-U S11 PO-T 00

For all body types

S11	1NO + 1NC Snap Action Contacts	
T11	1NO + 1NC Non overlapping Slow Action Contacts	

Options

PS 21 M-U S11 PO-T 00

00

Standard type

1m PVC cable 4x0.75mm² (Plastic Type)
1m PVC cable 5x0.75mm² (Metal Type)

Other cable lengths

02	2m	07	7m
03	3m	08	8m
04	4m	09	9m
05	5m	10	10m
06	6m		



Limit Switch - Safety Type Plastic and Metal Body



- Double Insulation □ (for thermoplastic type)
- High mechanical resistant
- Degree of protection IP65 (thermoplastic) IP66 (metal)
- Reinforced UL-V0 thermoplastic fiber-glass body
- Zinc alloy (Zamack) or aluminium body
- Positive Opening Operation ⊕
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current I_{th} = 10A
- Rated insulation voltage U_i = 500V
- UL, CSA
- Conforms with IEC 947-5-1 (EN 60947-5-1)

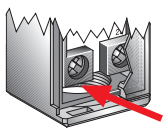
Body

PS 21 S⁽¹⁾-N S11 05-T⁽²⁾ 00



Cable Gland

PS 21 S-N S11 05-T 00



- P** = cable inlet PG13.5 cable gland
- B** = cable inlet PG11 cable gland
- M** = cable inlet M20x1.5 cable gland
- A** = cable inlet M16x1.5 cable gland
- N** = cable inlet 1/2" NPT cable gland

Accessories for Head Type 05 and 09

Operating keys for 05 and 09 heads - only for PS21 and PS42

K13		Bent key 22mm	K17		Shock absorbing bent key
K14		Flat key 22mm	K18		Shock absorbing flat key
K15		Bent key 13mm	K19		Adjustable joint key
K16		Flat key 13mm			

Operating keys for 05 head - only for PS31 and PS43

K35		Bent key 22mm	K39		Adjustable joint key
K36		Flat key 22mm			

Contact Block

PS 21 S-N S11 05-T 00

For all body types

S11	1NO + 1NC Snap Action Contacts	
T11	1NO + 1NC Non overlapping Slow Action Contacts	
O11	1NO + 1NC Overlapping Slow Action Contacts	
T02	2NC Slow Action Contacts	
T20	2NO Slow Action Contacts	
S02	2NC Snap Action Contacts	

Only for PS31 and PS43

T12	1NO + 2NC Non overlapping Slow Action Contacts	
T21	2NO + 1NC Non overlapping Slow Action Contacts	
T03	3NC Simultaneous Slow Action Contacts	
T30	3NO Simultaneous Slow Action Contacts	

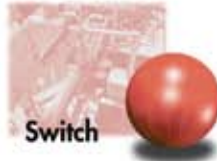
- (1) **S** = Key Actuator
- R** = Pull Wire (rope)
- (2) **Y** = Metal

- H** = Hinge (pin or shaft)
- K** = With Pull Button Reset
- T** = Thermoplastic

The Complete Product Package



Sense
 Inductive and Capacitive Sensors
 Photoelectric Sensors
 Inductive Loop Detectors
 Ultrasonic Sensors
 Motion/Presence Vision Sensors
 Radar Sensors
 Conductive Level Sensors
 Limit Switches
 Magnetic Switches



Switch
 Solid State Relays
 Hybrid Relays
 Solid State Contactors
 Contactors and Overloads
 Manual Motor Starters/Protectors
 Motor Controllers
 Variable Frequency Drives
 Electromechanical Relays
 Push Buttons and Pilot Devices



Control
 Energy Management
 Solar Energy Monitoring
 Switching Power Supplies
 Digital Panel Meters
 Timers and Counters
 Monitoring Controls
 Temperature Controllers



Safety
 Control Modules
 Interlock Switches
 Magnetic Sensors
 Light Curtains
 Mat Systems



Fieldbus
 Dupline® Field and Installation Bus
 Building Automation Systems
 Parking Guidance Systems
 Elevator Systems
 Mining Systems

A Global Force in Industrial Automation

CARLO GAVAZZI has a multitude of sales offices spanning North America (*not to mention our hundreds of distributors*). Therefore, we can be viewed as "your local automation resource" - assisting you every step of the way in finding the proper solution for your various application requirements. Naturally, our job is greatly simplified as we have such a vast range of solutions to offer you via our comprehensive *product package*.

Our worldwide sales offices make us an ideal business partner, *especially for manufacturers of exported machinery*, as our products are available locally and they are RoHS and CE marked.

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