

# GLS Series

## Global limit switch



### Features

- EN 50041 and EN 50047
- Designed to IEC electrical standard for world-wide use
- Forced disconnect Normally Closed contacts conform to IEC 60947-5-1-3
- Rugged housing (Zinc Die-cast)
- Full range of actuator heads and levers
- Sealing up to IP67
- 3 conduit entry housing style
- Snap action and slow action basic switches
- International conduit sizes
- Universal voltage LED 12 - 250 Vac/dc
- Galvanically isolated contacts
- Plug-in versions and connector versions

### Benefits

- Standard mounting and characteristics are globally available and accepted
- Welded contacts will separate
- Wiring and body flexibility
- Reduced replacement time

### Description

GLS switches are designed to provide a complete range of CENELEC approved products, and are suitable for most industrial applications.

The standard product range comprises plug-in bodies, and LED options as well as EN 50041 body styles. The EN 50041 norm defines the switch mounting centres as 30 mm x 60 mm and also defines the switching characteristics of the side rotary head with fixed lever, top pin plunger and top roller plunger. This means that the switch can be interchanged in the application with other EN 50041 switches with mounting and switching characteristics maintained. Honeywell offers many more head styles and switching options. Gold contact versions offer security in switching very low energies. Our 2NC+2NO basic offers tremendous flexibility in wiring options.

The miniature product range offers the user a choice of plastic, metal and three conduit versions which are all mounting (20-22 mm) compatible with each other. The EN 50047 standard defines how the switches are mounted and the switching characteristics for fixed side rotary lever, top pin plunger and top roller plunger.

Most of the switching options for the standard products are also possible with the miniature products.

**Look for our new connectorised versions for quick replacement with no disturbance of the wiring. The range has been designed to cope with general purpose industrial applications for OEMs and end users alike.**



### Low energy switching

In today's demanding age of low energy controls, electromechanical switches are frequently used to interface directly with PLCs and other low energy devices. To accommodate this requirement GLS offers a gold plated contact version of the standard basic switch. This improves reliability of switching at low currents and voltages by protecting the contact surfaces from contamination during operation or storage prior to use. Standard silver contacts have the disadvantage in that the contact surface may tarnish under certain environmental conditions e.g. in the presence of moisture.

Low energy basic switches are rated as follows:  
Operating Voltage  $U_e$  1 to 50 Vac or dc  
Operating Current  $I_e$  1 microamp to 100 mA

# GLA - Metal standard

## GLF - (w/1LED)

### 12...250 Vac/dc

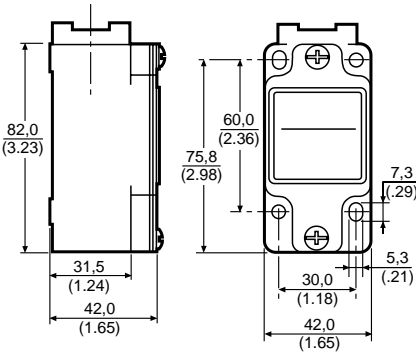
## GLH - (w/2LED)

### 18...30 Vdc

## EN 50041

### Technical data

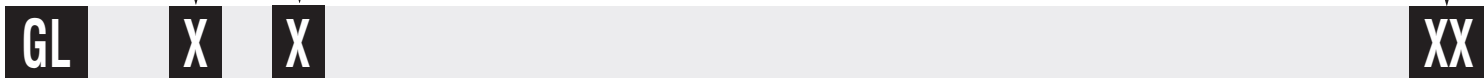
<b>Mechanical life</b>	up to 15 million operations
<b>Degree of protection</b>	IP67 NEMA/UL type 1, 4, 12, 13
<b>Temperature range</b>	Operating : -25°C to +85°C -13°F to +185°F Storage : -40°C to +85°C -40°F to +185°F
<b>Approvals</b>	IEC60947-5-1 EN60947-5-1 AC15 A300/A600 DC13 Q300 UL & CSA
<b>Vibration</b>	10 g conforming to IEC 68-2-6
<b>Shock</b>	50 g conforming to IEC 68-2-27 Terminal marking to EN 50013



### Conduit thread

Standard =	<b>A</b>	<b>A</b>	= 1/2" NPT
(w/1LED) =	<b>F</b>	<b>B</b>	= PG 13,5
(w/2LED) =	<b>H</b>	<b>C</b>	= 20 mm
		<b>D</b>	= PF 1/2

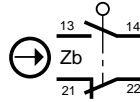
### Ordering :



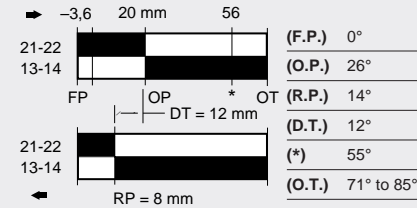
Example : GLA B 01 B – GLF B 01 B – GLH B 01 B

### Snap-Action Contacts

1 NORMALLY CLOSED / 1 NORMALLY OPEN



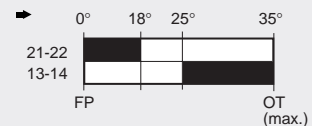
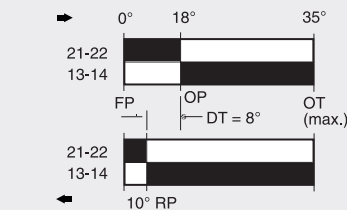
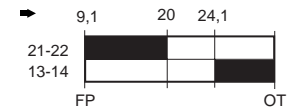
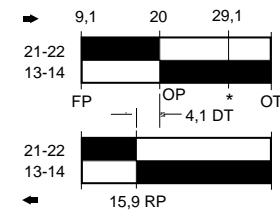
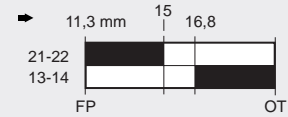
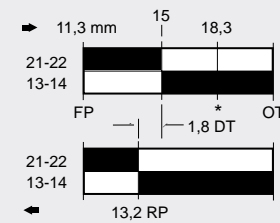
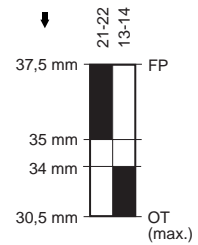
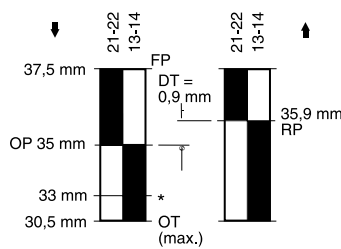
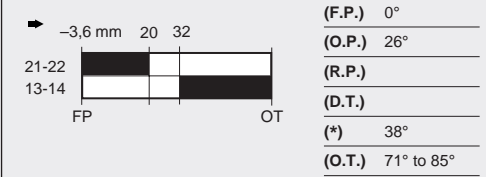
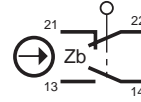
█ Circuit closed  
\* Positive opening to IEC /EN60947-5-1-3



### Slow-Action Contacts

BREAK BEFORE MAKE

1 NORMALLY CLOSED / 1 NORMALLY OPEN



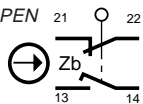
\* Point from which the positive opening is assured



Note: See page 9

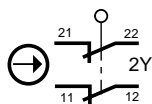
### Slow-Action Contacts

MAKE BEFORE BREAK  
1 NORMALLY CLOSED/  
1 NORMALLY OPEN



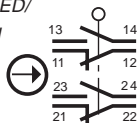
### Slow-Action Contacts

2 NORMALLY CLOSED



### Snap-Action Contacts

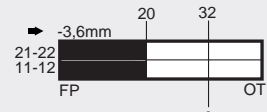
DOUBLE POLE  
2 NORMALLY CLOSED/  
2 NORMALLY OPEN



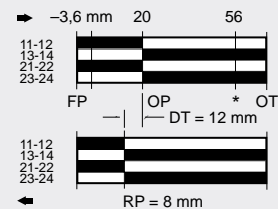
### Actuator Types



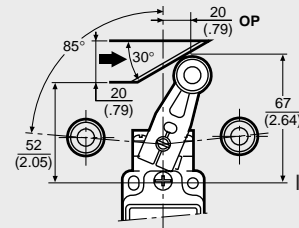
(F.P.) 0°  
(O.P.) 26°  
(R.P.)  
(D.T.) 12°  
(\*) 55°  
(O.T.) 71° to 85°



(F.P.) 0°  
(O.P.) 26°  
(R.P.)  
(D.T.)  
(\*) 38°  
(O.T.) 71° to 85°



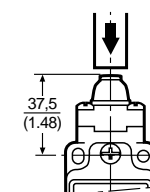
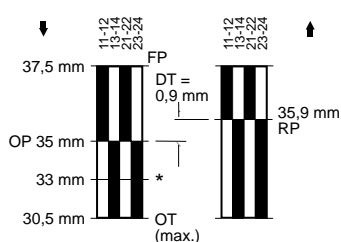
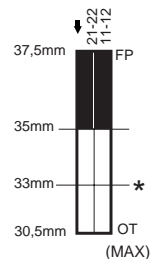
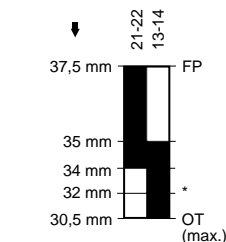
(F.P.) 0° (D.T.) 12°  
(O.P.) 26° (\*) 55°  
(R.P.) 14° (O.T.) 71° to 85°



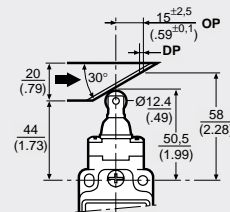
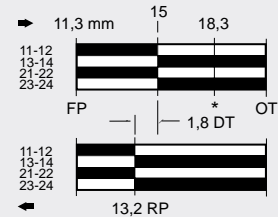
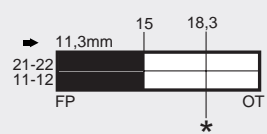
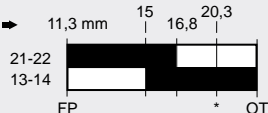
A1B

Additional levers available (see page 23)

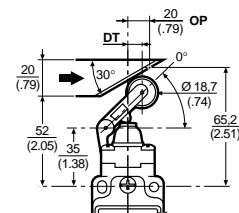
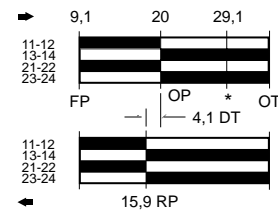
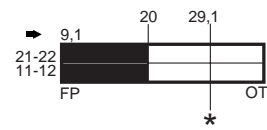
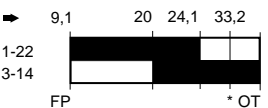
Side Rotary, Metal Roller



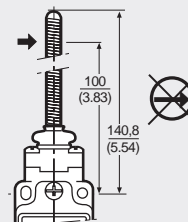
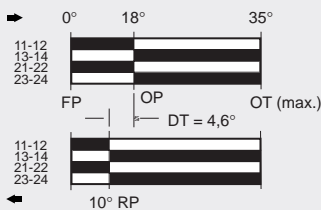
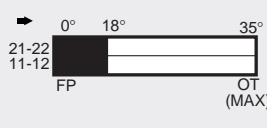
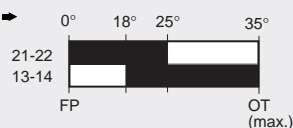
Top Pin Plunger



Top Roller Plunger



Top Roller Lever



Coil Wobble Stick

E7B

(GLA) (GLF, GLH)

04

34^

06

36^

20

22^

24

32^

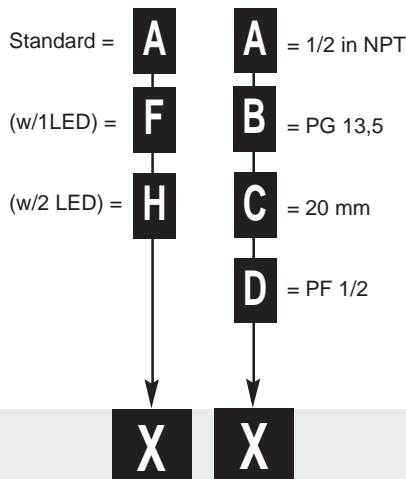
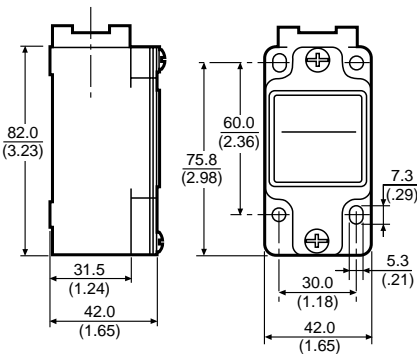
XXX

# GLA - Metal standard GLF - (w/1 LED) 12...250 Vac/dc GLH - (w/2 LED) 18...30 Vdc EN 50041 Centre neutral option

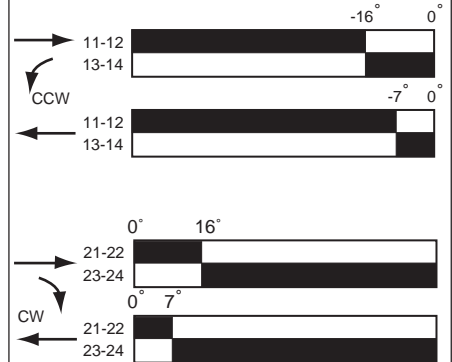
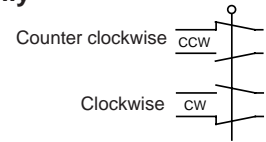
An extension to the functionality can be achieved through a Centre Neutral side rotary head. This head when at rest in the vertical position sets the basic up at the mid-point between the two steps (centre neutral). By rotating the head clockwise the basic switch is depressed further causing 21-22 to SNAP to 23-24. By rotating the head counter clockwise the basic switch is released causing 11-12 to SNAP to 13-14. Typically this is used to detect direction of motion. The characteristics are the factory settings. The J head includes a bolt adjustment for altering the neutral position. This means that the SNAP points can be offset in one direction or the other.

## Technical data

<b>Mechanical life</b>	up to 15 million operations
<b>Degree of protection</b>	IP67 NEMA/UL type 1, 4, 12, 13
<b>Temperature range</b>	Operating: -25 °C to +85 °C -13 °F to +185 °F Storage: -40 °C to +85 °C -40 °F to +185 °F
<b>Approvals/standards</b>	IEC 60947-5-1 EN 60947-5-1 AC15 A300/A600 DC13 Q300 UL, CSA
<b>Vibration</b>	10 g conforming to IEC 68-2-6
<b>Shock</b>	50 g conforming to IEC 68-2-27 Terminal marking to EN 50013



## Snap Action Contacts Double pole centre neutral GLA only



## Ordering guide:

**GL**

**X**



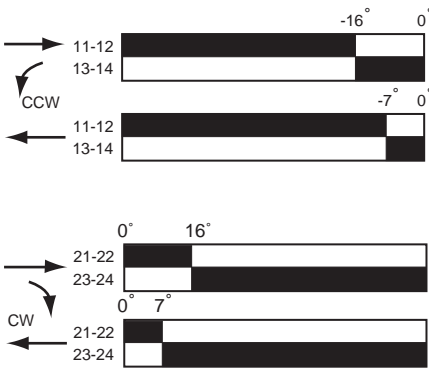
**X**

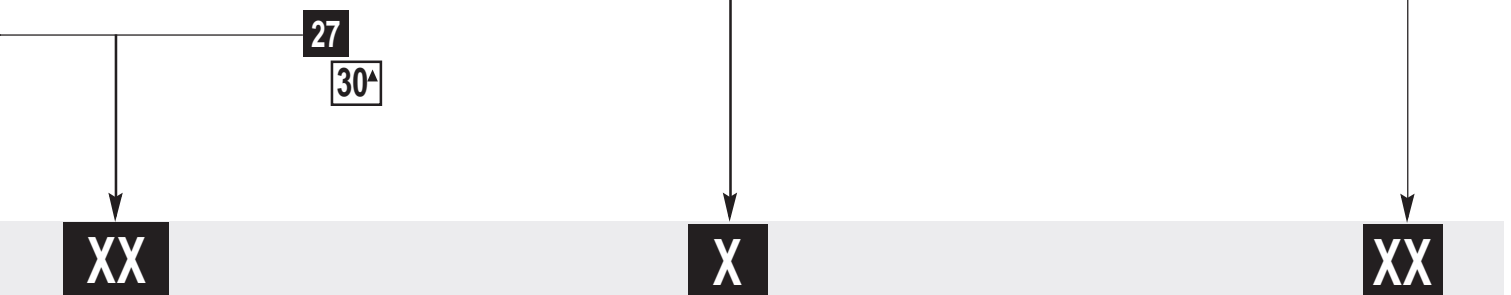
Example: GL

▲ Low Energy Contacts  
Note: See page 9

26

29▲

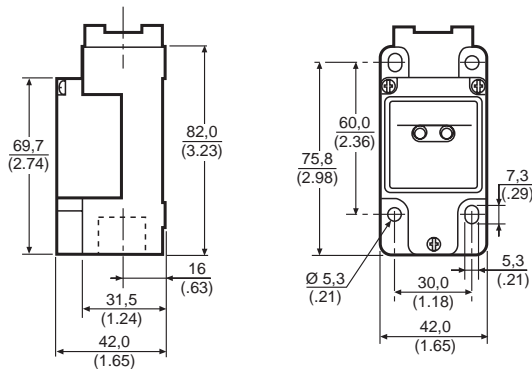
<b>Snap Action Contacts</b> <b>Double pole centre neutral</b> <b>GLF/GLH only</b>  Counter clockwise   Clockwise 	<b>Head</b>	<b>Actuator Types</b>	
	<b>J</b>	Fixed side rotary roller, plastic  Fixed side rotary roller, metal  Adjustable side rotary roller, plastic  Adjustable side rotary roller, metal  Adjustable side rotary rod  Fixed side rotary offset lever	<b>1A</b>  <b>1B</b>  <b>2A</b>  <b>2B</b>  <b>4J</b>  <b>5B</b>



# GLB - Metal plug-in GLG - (w/1LED) 12...250 Vac/dc GLJ - (w/2LED) 18...30 Vdc EN 50041

## Technical data

<b>Mechanical life</b>	up to 15 million operations
<b>Degree of protection</b>	IP67 NEMA/UL type 1, 4, 12, 13
<b>Temperature range</b>	Operating : -25°C to +85°C -13°F to +185°F Storage : -40°C to +85°C -40°F to +185°F
<b>Approvals</b>	IEC 60947-5-1 EN60947-5-1 AC15 A300/A600 DC13 Q300 UL & CSA
<b>Vibration</b>	10 g conforming to IEC 68-2-6
<b>Shock</b>	50 g conforming to IEC 68-2-27 Terminal marking to EN 50013



## Conduit thread

Plug-in = <b>B</b>	<b>A</b> = 1/2" NPT
(w/1LED) = <b>G</b>	<b>B</b> = PG 13,5
(w/2LED) = <b>J</b>	<b>C</b> = 20 mm
	<b>D</b> = PF 1/2
<b>GL</b>	<b>X</b>
<b>X</b>	<b>X</b>

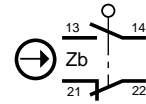
## Ordering :



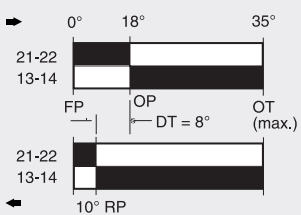
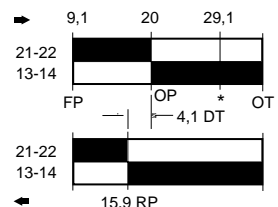
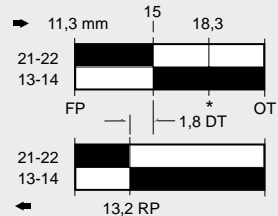
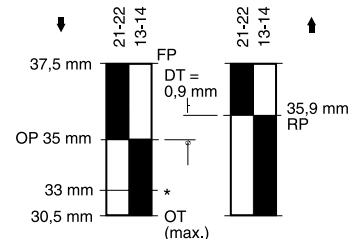
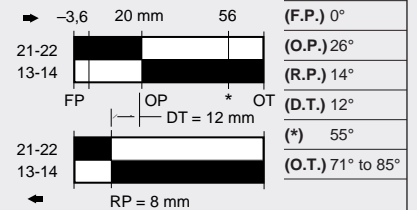
Example : GLB B 02 B – GLG B 12 B – GLJ B 13 B

## Snap-Action Contacts

1 NORMALLY CLOSED / 1 NORMALLY OPEN



█ Circuit closed  
\* Positive opening to IEC/EN60947-5-1-3



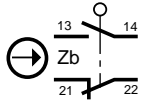
\* Point from which the positive opening is assured

(GLB only)

02

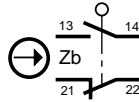
**Snap-Action Contacts**

1 NORMALLY CLOSED / 1 NORMALLY OPEN

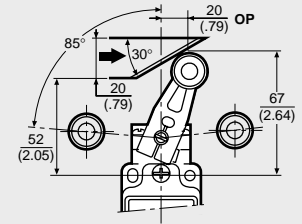
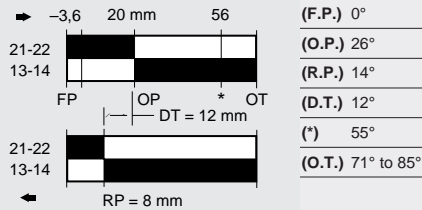
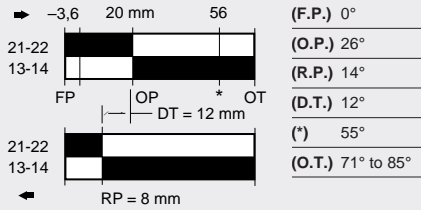


**Snap-Action Contacts**

1 NORMALLY CLOSED / 1 NORMALLY OPEN

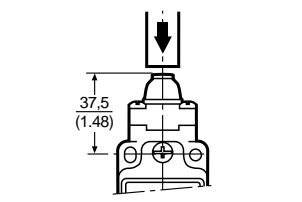
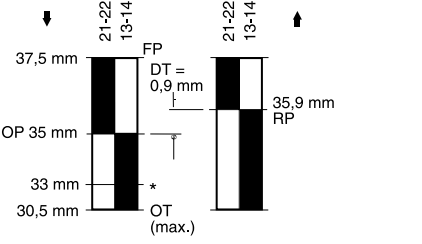
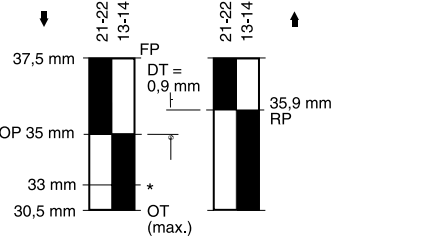


**Actuator Types**

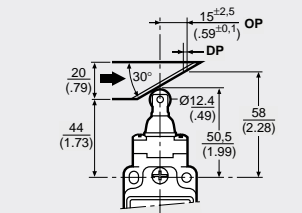
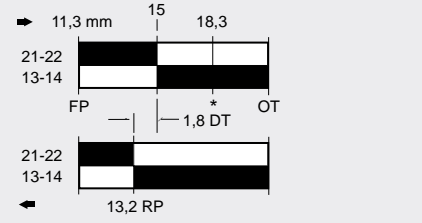
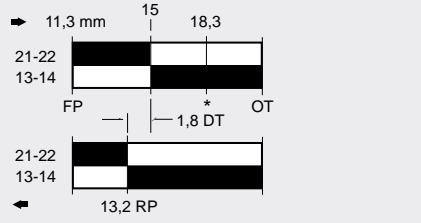


**A1B**  
Additional levers available (see page 23)

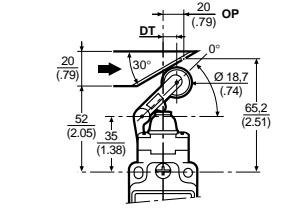
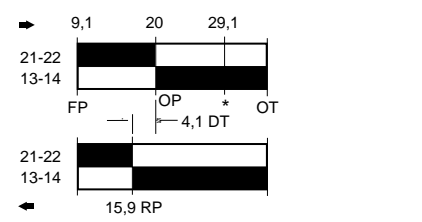
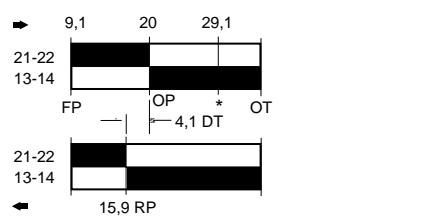
Side Rotary, Metal Roller



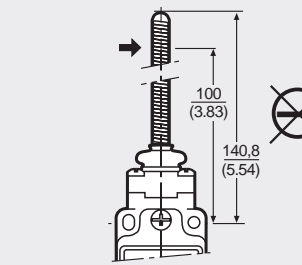
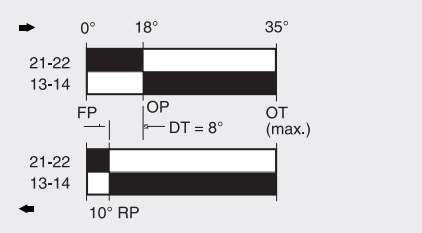
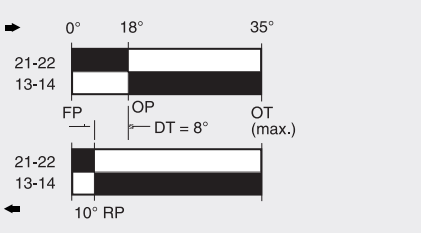
Top Pin Plunger



Top Roller Plunger



Top Roller Lever



Coil Wobble Stick

**E7B**

(GLG only)

**12**

(GLJ only)

**13**

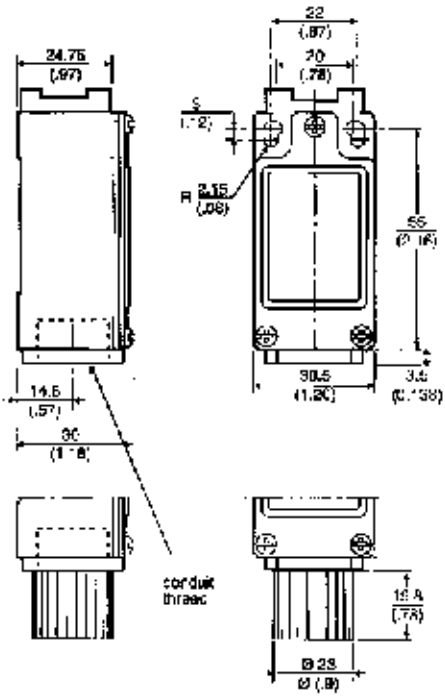
**XX**

**XXX**

# GLC EN 50047 Metal standard

## Technical data

<b>Mechanical life</b>	up to 15 million operations
<b>Degree of protection</b>	IP66 NEMA/UL type 1, 4, 12, 13
<b>Temperature range</b>	Operating : -25°C to +85°C -13°F to +185°F Storage : -40°C to +85°C -40°F to +185°F
<b>Approvals</b>	IEC60947-5-1 EN60947-5-1 AC15 A300 DC13 Q300 UL & CSA
<b>Vibration</b>	10 g conforming to IEC 68-2-6
<b>Shock</b>	50 g conforming to IEC 68-2-27 Terminal marking to EN 50013



### Conduit thread

- A** = 1/2" NPT adaptor
  - B** = PG 13,5
  - C** = 20 mm
  - D** = PF 1/2
- ↓
- X**

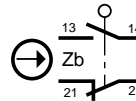
### Ordering :

**GLC**

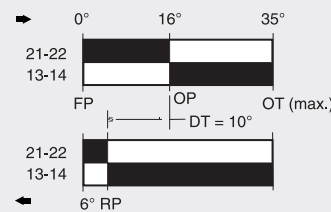
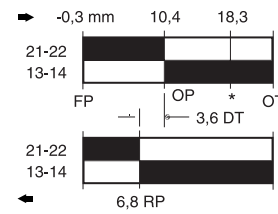
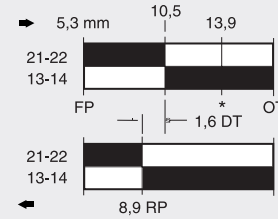
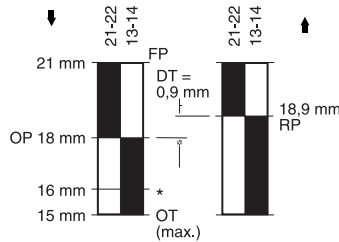
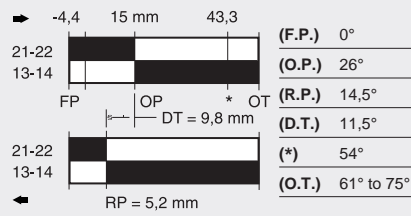
Example : GLC B 01 B

### Snap-Action Contacts

1 NORMALLY CLOSED / 1 NORMALLY OPEN



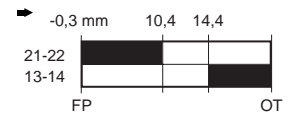
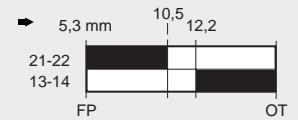
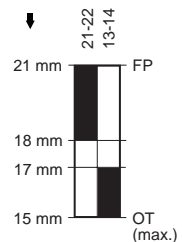
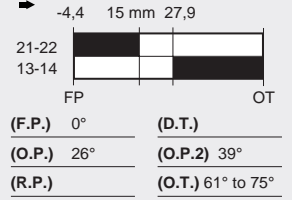
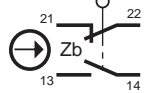
█ Circuit closed  
\* Positive opening to IEC/EN60947-5-1-3



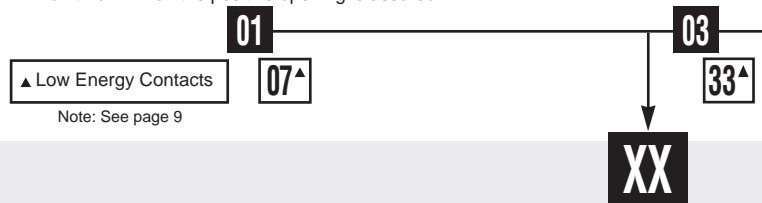
### Slow-Action Contacts

BREAK BEFORE MAKE

1 NORMALLY CLOSED /  
1 NORMALLY OPEN



\* Point from which the positive opening is assured

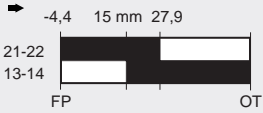
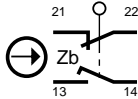


Note: See page 9

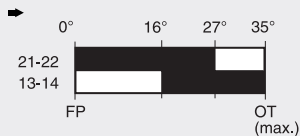
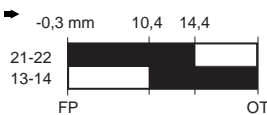
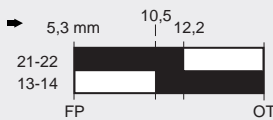
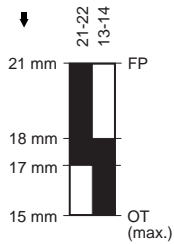


### Slow-Action Contacts

MAKE BEFORE BREAK  
1 NORMALLY CLOSED/  
1 NORMALLY OPEN

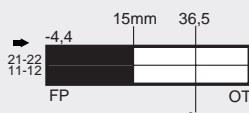
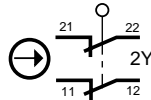


(F.P.)	0°	(D.T.)	
(O.P.)	26°	(O.P.2)	39°
(R.P.)		(O.T.)	61° to 75°

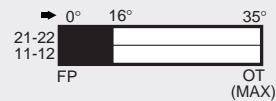
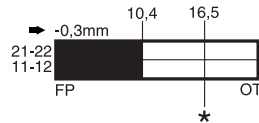
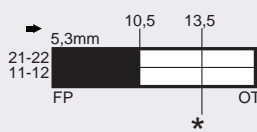
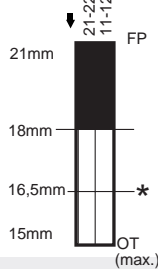


### Slow-Action Contacts

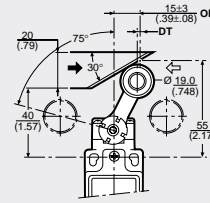
2 NORMALLY CLOSED



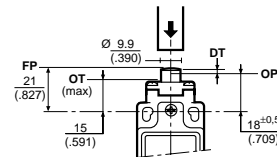
(F.P.)	0°	(D.T.)	
(O.P.)	26°	(*)	46.5°
(R.P.)		(O.T.)	61° to 75°



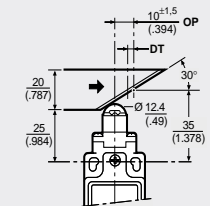
### Actuator Types



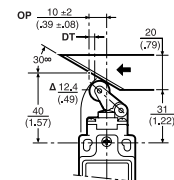
Side Rotary, Metal Roller



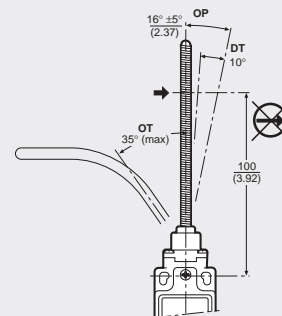
Top Pin Plunger



Top Roller Plunger



Top Roller Lever



Coil Wobble Stick

**A1B**

Additional levers available (see page 23)

**B**

**C**

**D**

**E7B**

**04**

**34^**

**06**

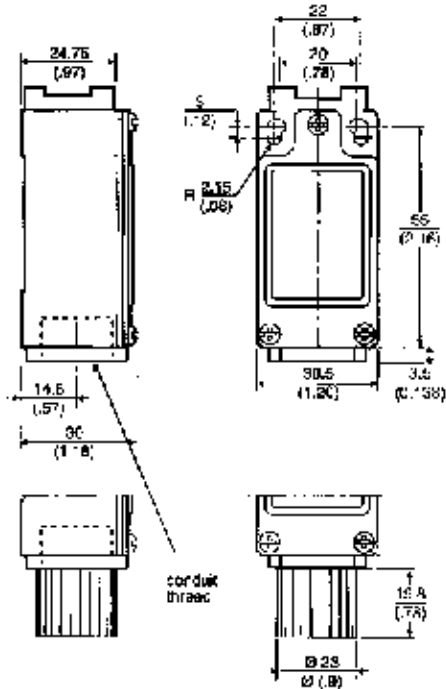
**36^**

**XXX**

# GLD EN 50047 Double insulated standard

## Technical data

<b>Mechanical life</b>	up to 15 million operations
<b>Degree of protection</b>	IP66 NEMA/UL type 1, 12, 13
<b>Temperature range</b>	Operating : -25°C to +85°C Operating : -13°F to +185°F Storage : -40°C to +85°C Storage : -40°F to +185°F
<b>Approvals</b>	IEC/EN60947-5-1 EN60947-5-1 AC15 A600 DC13 Q300 UL & CSA
<b>Vibration</b>	10 g conforming to IEC 68-2-6
<b>Shock</b>	50 g conforming to IEC 68-2-27 Terminal marking to EN 50013



### Conduit thread

- A** = 1/2" NPT adaptor
- B** = PG 13,5
- C** = 20 mm adaptor
- D** = PF 1/2 adaptor

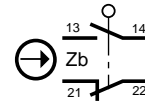
### Ordering :

**GLD** **X**

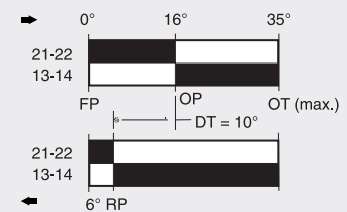
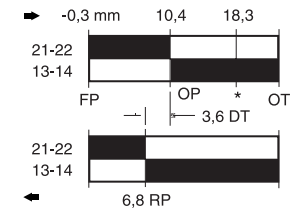
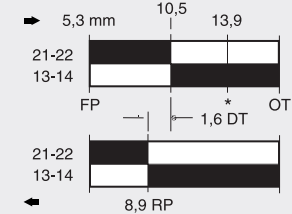
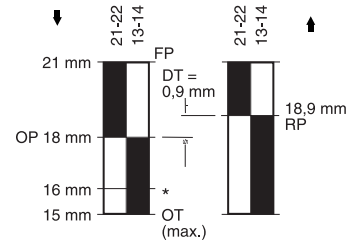
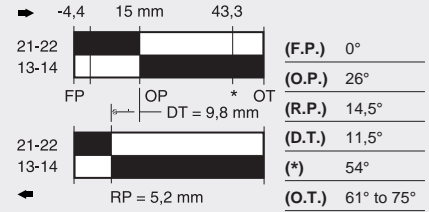
Example : GLD B 01 B

### Snap-Action Contacts

1 NORMALLY CLOSED / 1 NORMALLY OPEN



█ Circuit closed  
\* Positive opening to IEC/EN 60947-5-1-3



\* Point from which the positive opening is assured

**01**

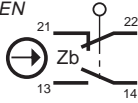
▲ Low Energy Contacts

**07<sup>A</sup>**

Note: See page 9

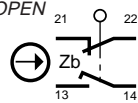
### Slow-Action Contacts

*BREAK BEFORE MAKE*  
1 NORMALLY CLOSED /  
1 NORMALLY OPEN



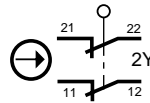
### Slow-Action Contacts

*MAKE BEFORE BREAK*  
1 NORMALLY CLOSED /  
1 NORMALLY OPEN

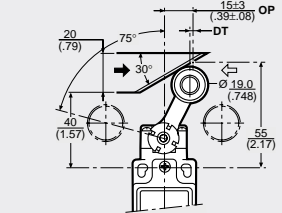
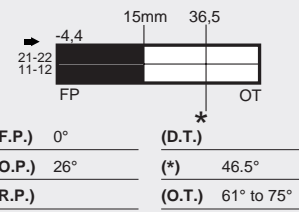
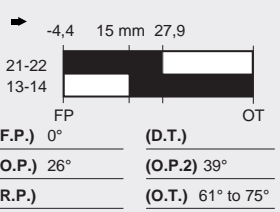
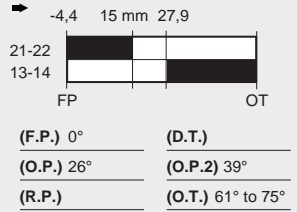


### Slow-Action Contacts

2 NORMALLY CLOSED

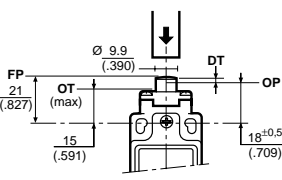
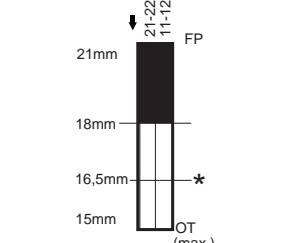
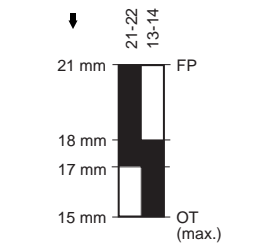
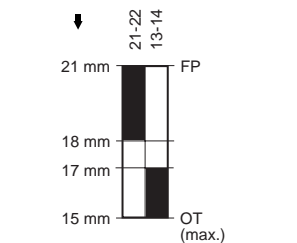


### Actuator Types

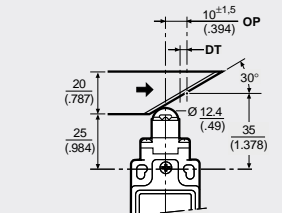
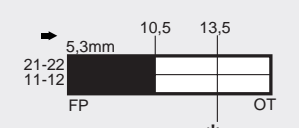
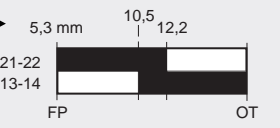
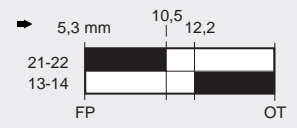


**A1B**  
Additional levers available (see page 23)

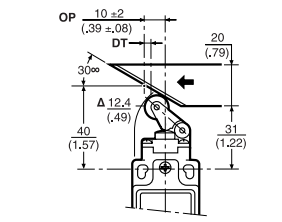
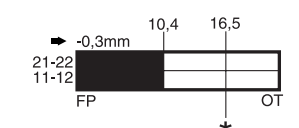
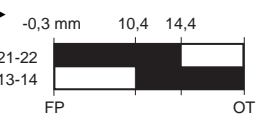
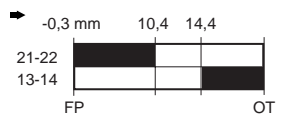
Side Rotary, Metal Roller



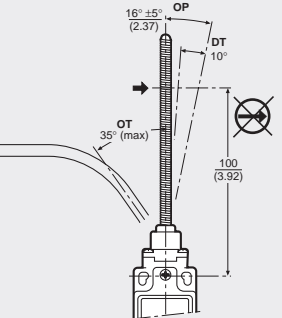
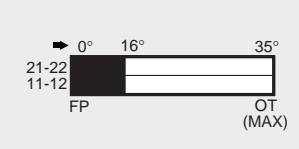
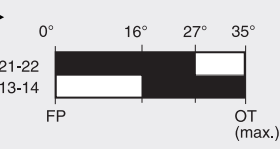
Top Pin Plunger



Top Roller Plunger



Top Roller Lever



Coil Wobble Stick

03

33<sup>A</sup>

04

34<sup>A</sup>

06

36<sup>A</sup>

XX

XXX

# GLE EN 50047 Compatible 3 conduit metal standard

## Technical data

**Mechanical life** up to 15 million operations

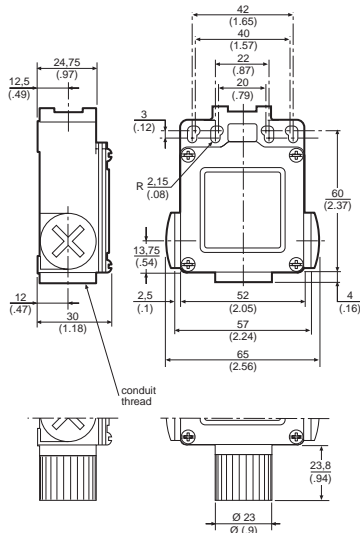
**Degree of protection** IP66  
NEMA/UL  
type 1, 4, 12, 13

**Temperature range** Operating :  
-25°C to +85°C  
-13°F to +185°F  
Storage :  
-40°C to +85°C  
-40°F to +185°F

**Approvals** IEC60947-5-1  
EN60947-5-1  
AC15 A300  
DC13 Q300  
UL & CSA

**Vibration** 10 g conforming to  
IEC 68-2-6

**Shock** 50 g conforming to  
IEC 68-2-27  
Terminal marking to  
EN 50013



### Conduit thread

**A** = 1/2" NPT adaptor

**B** = PG 13,5

**C** = 20 mm

**D** = PF 1/2

Ordering :

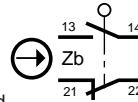
**GLE**

**X**

Example : GLE B 01 B

### Snap-Action Contacts

1 NORMALLY CLOSED / 1 NORMALLY OPEN



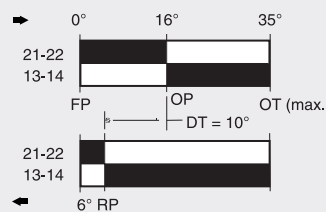
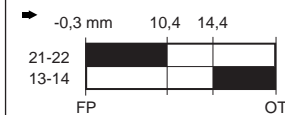
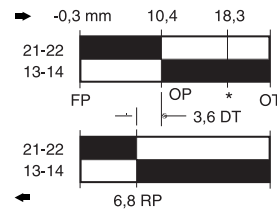
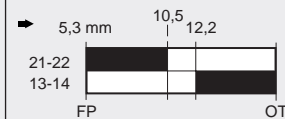
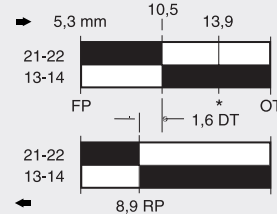
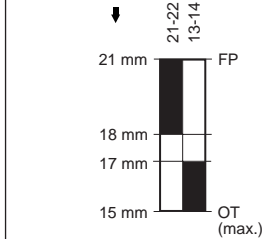
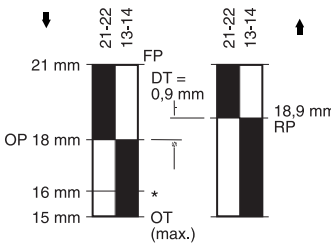
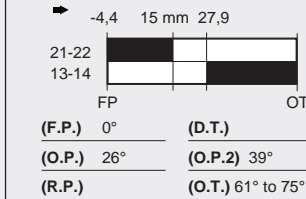
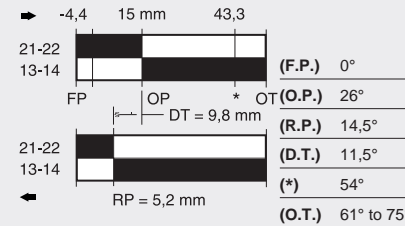
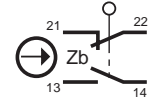
█ Circuit closed

\* Positive opening to IEC/EN60947-5-1-3

### Slow-Action Contacts

BREAK BEFORE MAKE

1 NORMALLY CLOSED/  
1 NORMALLY OPEN



\* Point from which the positive opening is assured

▲ Low Energy Contacts

**01**

**07<sup>▲</sup>**

**03**

**33<sup>▲</sup>**

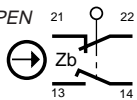
Note: See page 9

**XX**

### Slow-Action Contacts

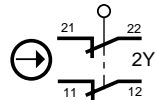
MAKE BEFORE BREAK

1 NORMALLY CLOSED/  
1 NORMALLY OPEN



### Slow-Action Contacts

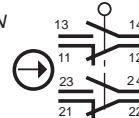
2 NORMALLY CLOSED



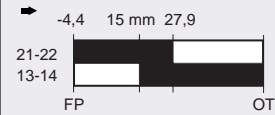
### Snap-Action Contacts

DOUBLE POLE

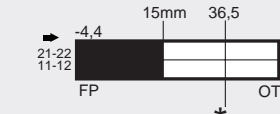
2 NORMALLY CLOSED/  
2 NORMALLY OPEN



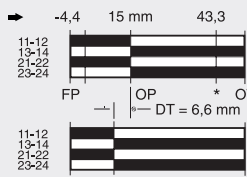
### Actuator Types



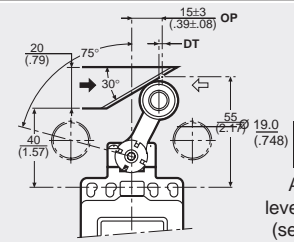
(F.P.)	0°	(D.T.)	
(O.P.)	26°	(O.P.2)	39°
(R.P.)		(O.T.)	61° to 75°



(F.P.)	0°	(D.T.)	
(O.P.)	26°	(*)	46.5°
(R.P.)		(D.T.)	61° to 75°

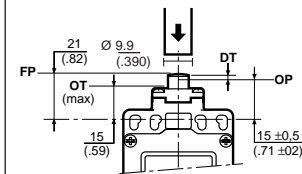
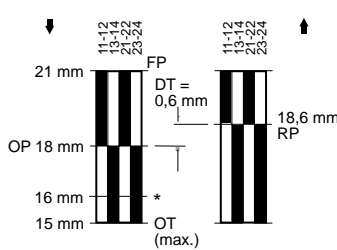
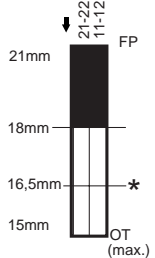
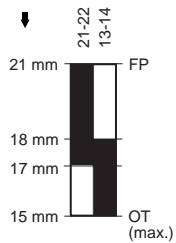


(F.P.)	0°	(D.T.)	8°
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(R.P.)	180°	(O.T.)	61° to 75°

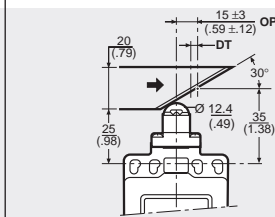
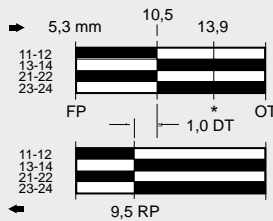
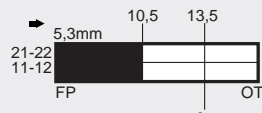
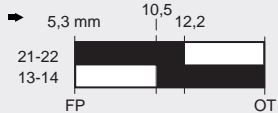


Side Rotary, Metal Roller

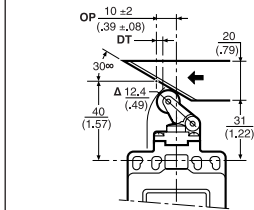
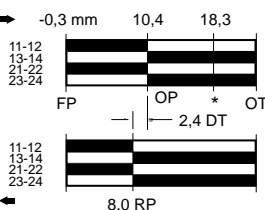
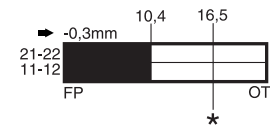
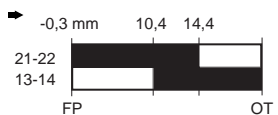
**A1B**  
Additional levers available (see page 23)



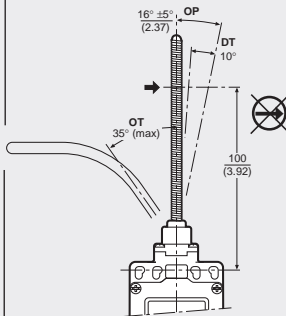
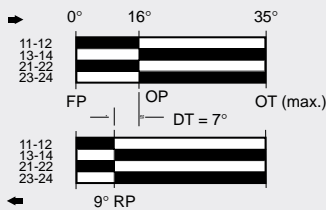
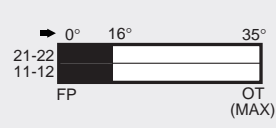
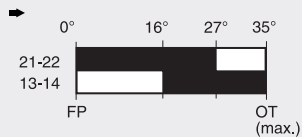
Top Pin Plunger



Top Roller Plunger



Top Roller Lever



Coil Wobble Stick

04

34^

06

36^

24

32^













E7B

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# GLS Head modification

It is possible to order GLS with the head set to different positions. This is useful when the requirement is for a different position to that offered as standard.

Simply by adding a modification to the part number you can specify a customised version. The table below illustrates.

Code	Description	Standard Set Up	With Modification Code
-1	Clockwise rotation large DIN side rotaries only		
-2	Counter Clockwise rotation DIN side rotaries only		
-3	Head assembled with actuator to right side		
-4	Head assembled with actuator to left side		
-5	Head assembled with actuator to mounting surface		
-6	Roller perpendicular to mounting surface		

## Example listings would be:

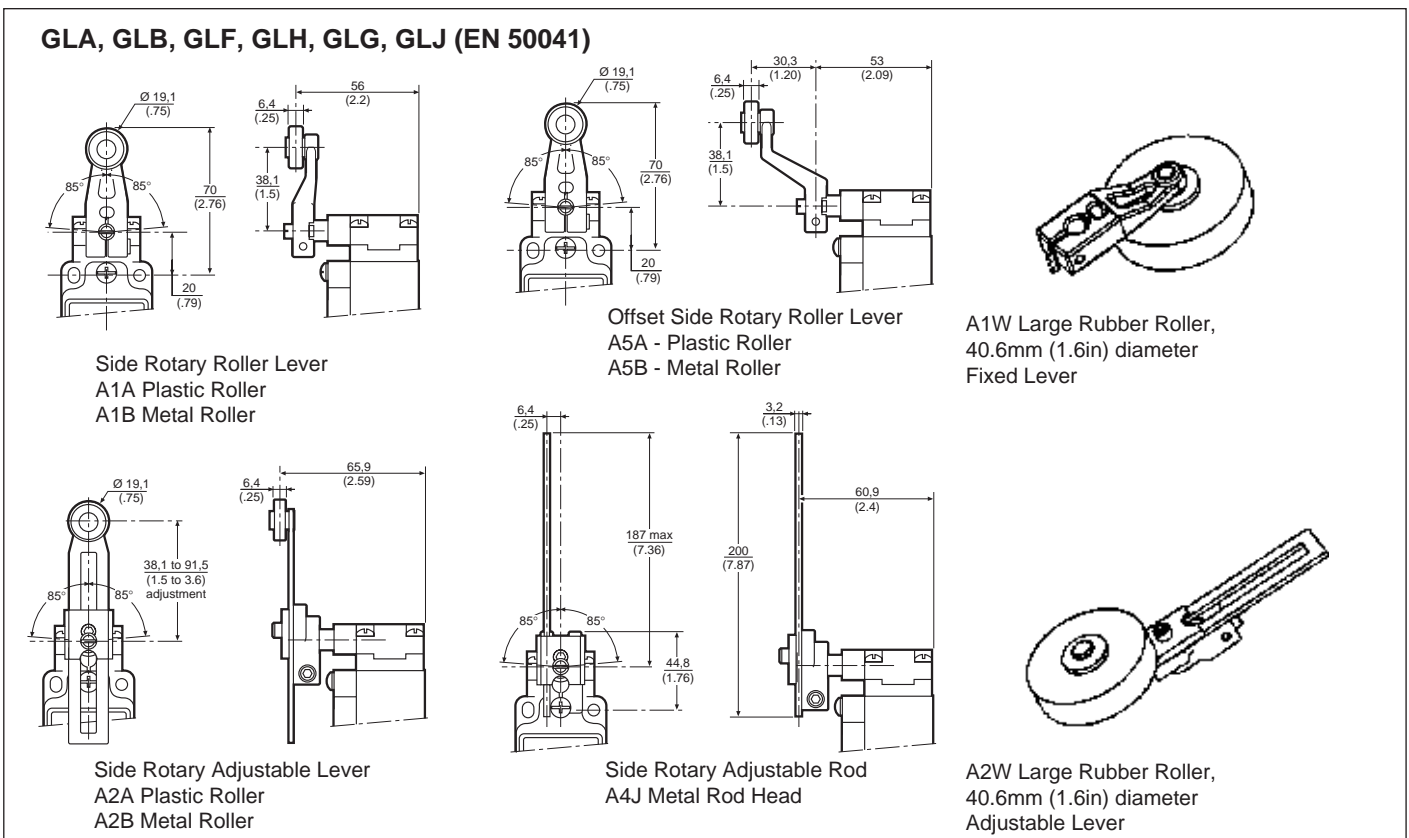
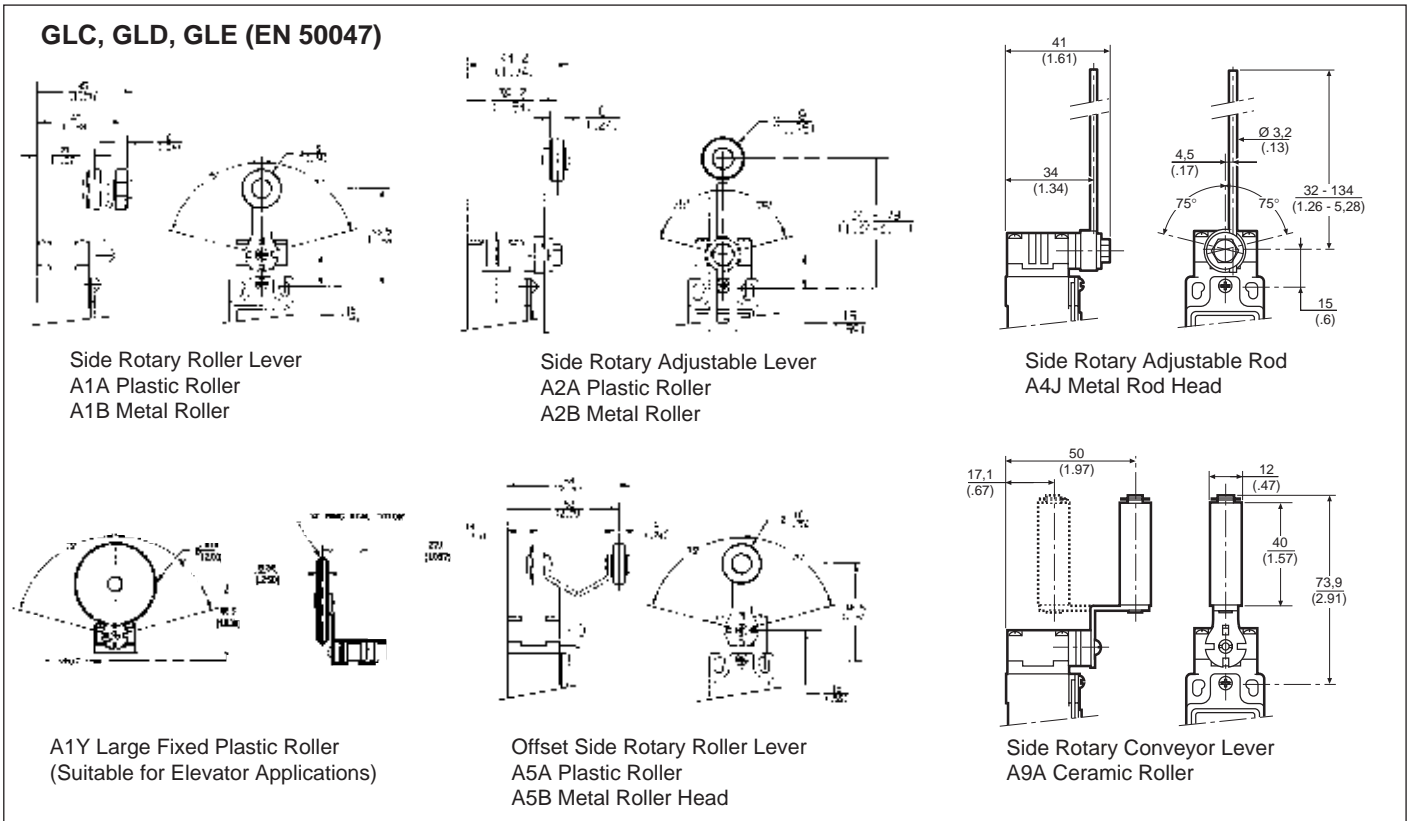
GLAB01A1B-1	Large DIN side rotary with head set to only actuate the basic in the clock-wise direction
GLHB03A2A-2	Large DIN 2 LED side rotary with head set to only actuate the basic in the counter clock-wise direction
GLCB04A4J-3	Metal miniature DIN adjustable rod with head set to face the right side (as viewed from the front)
GLEB24A5B-4	Three conduit miniature DIN offset side rotary arm with head set to face the left side (as viewed from the front)
GLBB02A4J-5	Plug-in large DIN adjustable rod with the head set facing the rear of the body
GLDBO1C-6	Plastic miniature DIN top roller with the roller rotated 90 ° from standard set-up

# Additional lever types

For use with all Side Rotary Head Styles.

**Figure 1** illustrates Miniature product lever types conforming to EN 50047 while

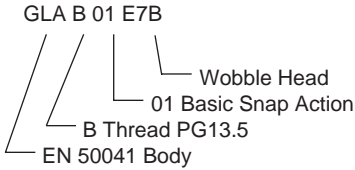
**Figure 2** illustrates Standard product lever types which conform to EN 50041. All dimensions are in mm/(inches).



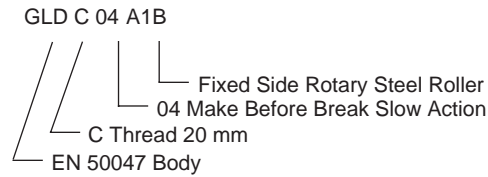
# Spare parts for the GLS Series

To order spare parts for your particular GLS simply use the GLS number on the front of the switch to identify the construction used and therefore the spare part you need.

For Example : The part No : GLAB01E7B



For Example : The part No : GLDC04A1B



From the tables below it is possible to obtain replacement Basic Switches, Heads, Actuators, Levers and LED Assemblies.

**Note :** Spare parts should only be used to replace parts on existing listings. Honeywell accepts no liability for parts used in combinations not recognised by Honeywell as valid listings.

## Basic switches

Body Type	Basic Switch								
	01	02	03	04	06	12	13	20	24
GLA	GLZ301		GLZ303	GLZ304	GLZ306			GLZ320	
GLB		\ GLZ2BB02							
GLC	GLZ301		GLZ303	GLZ304	GLZ306				
GLD	GLZ301		GLZ303	GLZ304	GLZ306				
GLE	GLZ301		GLZ303	GLZ304	GLZ306				GLZ324
GLF	GLZ301		GLZ303	GLZ304	GLZ306				
GLG						\ GLZ312			
GLH	GLZ301		GLZ303	GLZ304	GLZ306				
GLJ							\ GLZ313		

\ **Note 1 :** for these spares you will receive the front of the body with no head. To replace the faulty switch/LED assembly remove the old body and old head. Retrofit the head onto the replacement and plug in the spare switch/LED assembly into the old base.

## Heads

Body Type	Head Types									
	A	B	C	D	E7A	E7B	E7D	K8A	K8B	K8C
GLA	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C
GLB	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C
GLC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GLD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GLE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GLF	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C
GLG	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C
GLH	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C
GLJ	GLZ1AA	GLZ1AB	GLZ1AC	GLZ1AD	GLZ1AE7A	GLZ1AE7B	GLZ1AE7D	GLZ1AK8A	GLZ1AK8B	GLZ1AK8C

## Levers / Actuators (for GLZ1AA head type only (side rotary))

Body Type	Lever Actuator Type					
	1A	1B	2A	2B	4J	5B
GLA	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B
GLB	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B
GLC	N/A	N/A	N/A	N/A	N/A	N/A
GLD	N/A	N/A	N/A	N/A	N/A	N/A
GLE	N/A	N/A	N/A	N/A	N/A	N/A
GLF	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B
GLG	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B
GLH	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B
GLJ	GLZ51A	GLZ51B	GLZ52A	GLZ52B	GLZ54J	GLZ55B



## Parts description

Heads	
GLZ1AA	Side Rotary Head
GLZ1AB	Top Pin Plunger Head
GLZ1AC	Top Roller Plunger Head
GLZ1AD	Roller Arm Head
GLZ1AE7A	Plastic Wobble Stick Head Assembly
GLZ1AE7B	Coil Wobble Stick Head Assembly
GLZ1AE7D	Coil Whisker Head Assembly
GLZ1AK8A	140mm Cat's Whisker Head Assembly
GLZ1AK8B	190mm Cat's Whisker Head Assembly
GLZ1AK8C	Cat's Whisker Head Assembly
Basics	
GLZ301	Snap Action SPDT (01)
GLZ302	Snap Action SPDT Plug-In (02) see Note 1
GLZ303	SPDT Break Before Make (03)
GLZ304	SPDT Make Before Break (04)
GLZ306	SPDT 2 normally closed (06)
GLZ307	Snap Action SPDT (07) low energy contacts
GLZ312	Snap Action SPDT 1 LED Plug-In (12) see Note 1
GLZ313	Snap Action SPDT 2 LED Plug-In (13) see Note 1
GLZ320	Snap Action DPDT (20)
GLZ322	Snap Action DPDT (22) low energy contacts
GLZ324	Snap Action DPDT for 3 Conduit (24)
GLZ332	Snap Action DPDT for 3 Conduit (32) low energy contacts
GLZ333	SPDT Break Before Make (33) low energy contacts
GLZ336	SPDT 2 normally closed (36) low energy contacts
Actuators	
GLZ51A	Side Rotary Fixed Lever Nylon Roller Actuator
GLZ51B	Side Rotary Fixed Lever Steel Roller Actuator
GLZ52A	Side Rotary Adjustable Lever Nylon Roller Actuator
GLZ52B	Side Rotary Adjustable Lever Steel Roller Actuator
GLZ54J	Side Rotary Adjustable Rod Actuator
GLZ55B	Side Rotary Fixed Offset Lever Steel Roller
LED Assemblies	
GLZ6F	Spare 1 LED Assembly for GLF...
GLZ6H	Spare 2 LED Assembly for GLH...
Plug-in Modules	
GLZ4BA	GLB Base Plug-in Module - 1/2" NPT
GLZ4BB	GLB Base Plug-in Module - PG 13.5
GLZ4BC	GLB Base Plug-in Module - 20mm
GLZ4BD	GLB Base Plug-in Module - PF1/2
GLZ4GA	GLG Base Plug-in Module - 1/2" NPT
GLZ4GB	GLG Base Plug-in Module - PG 13.5
GLZ4GC	GLG Base Plug-in Module - 20mm
GLZ4GD	GLG Base Plug-in Module - PF1/2
GLZ4JA	GLJ Base Plug-in Module - 1/2" NPT
GLZ4JB	GLJ Base Plug-in Module - PG 13.5
GLZ4JC	GLJ Base Plug-in Module - 20mm
GLZ4JD	GLJ Base Plug-in Module - PF1/2

## ⚠ WARNING

### SPARE PARTS

- These spare parts are for direct replacement only.

No liability is accepted for switches which are fully assembled solely from spare parts.

## Tools

The following tools will be needed - depending on the task.

Posidrive screwdriver n° 1 & n° 2

Allen key 3 mm

When tightening a screw down the maximum force which should be applied should not exceed 80N.cm (7in.LB) on any screw on the complete assembly or basic switch terminal.

## Mounting instructions

Mounting, Installation and Wiring of the Limit Switch plays a critical role in the performance of the switch in service. Care should be taken in the position and orientation of the switch for optimum performance. All of the guidelines given below apply equally when replacing parts on the switch.

## Wiring

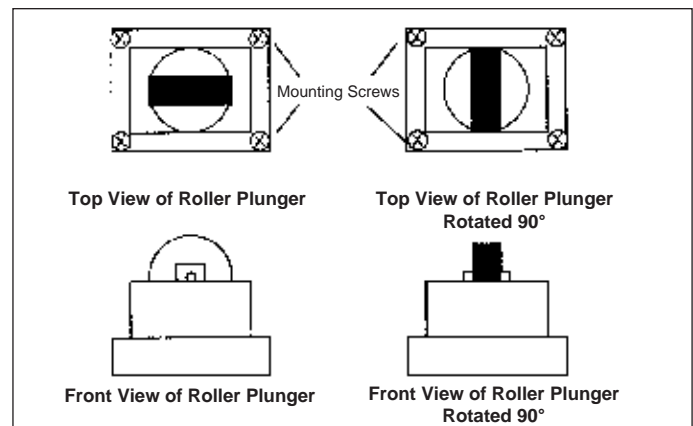
The GLS series has been designed to accept 14AWG wire maximum. Care should be taken to ensure that the wires are carefully arranged in the switch so that they do not overlap or otherwise interfere with the operation of the switch when the switch cover is replaced. If the wires are trapped between the basic and the cover then the switch may fail to operate correctly - ensure that an adequate gap exists between the fitted wires and the cover when fitted. It is not good practice to have very different diameter wires share the same terminal in the switch - uneven pressure on the wires will result.

## Mounting

The GLS series has been designed to be extremely flexible in mounting. Elongated mounting holes mean that the switch can be adjusted substantially prior to fixing in position. We recommend M4 maximum screws be used for mounting the switch in its application. Fix and test the switch for intended switch point in the application. When mounting the switch ensure that it is positioned to allow natural drainage of any moisture which may enter the enclosure during service. Natural drainage can be achieved by mounting the switch upright with the conduit entry at the bottom of the switch. Mounting the switch in the upright position will enable maintenance and replacement procedures to be carried out easily.

## Adjustment and set-up

In general no adjustment of the GLS should be necessary beyond correct mounting of the switch body as required. It is possible to change the switch actuator orientation. The example below shows a top roller plunger head rotated through 90°. The other head styles can also be rotated.

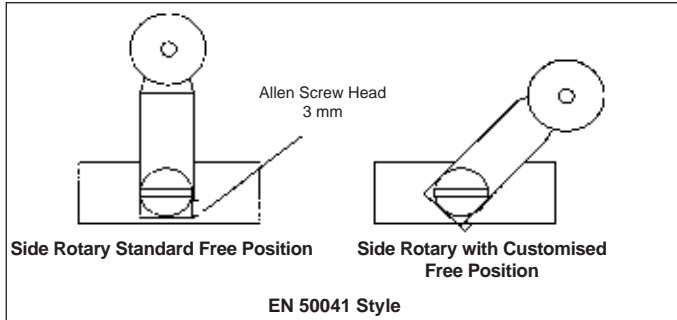


The head can be rotated by carefully removing the four combination head screws holding the head in position. Carefully remove the head assembly and rotate to the desired position. Replace the head assembly and tighten the mounting screws. Ensure that the head is properly located. Hand test the actuator to ensure that the switch functions and the actuator moves freely (sticking can occur if material has been deposited inside the drive train whilst the head assembly was removed).

## Side rotaries

The side rotary assemblies incorporate a feature for adjusting the free position of the side rotary lever. The EN 50041 body style allows infinite adjustment and reclamp. The EN 50047 style allows clamping in 10° increments. See the following diagrams for details of the mechanism in each case.

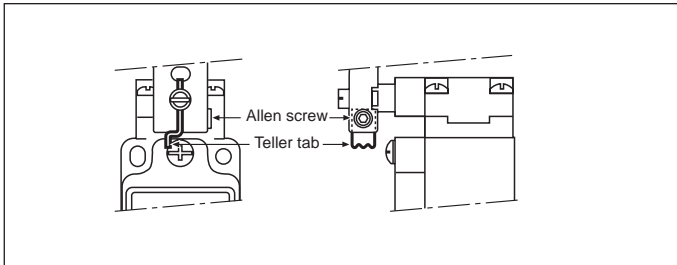
### Standard EN 50041 body style



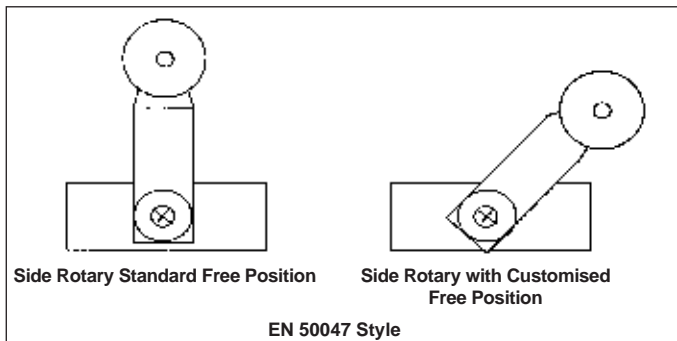
There are two lever mounting options : (1) By fully seating the lever in one of the four 90° detent positions on the shaft hub which provides positive lever retention; (2) By mounting the lever on the serrated portion of the shaft (which enables the lever to be mounted in any position).

To change the rotary lever's free position : (1) Use a 3 mm hex Allen wrench to loosen the Allen screw, as shown in the drawing above; (2) Back off the lever 2 mm and move it to the desired free position; (3) retighten the Allen screw; (4) Check to see if the free position is satisfactory for the application; (5) Repeat the adjustment procedure if necessary.

A teller tab located at the bottom of the lever (see diagram below) helps prevent lever slippage. It enables the installer to detect the correct tightening torque. When this tab cannot be moved, the Allen screw has been tightened properly.



### Miniature EN 50047 body style

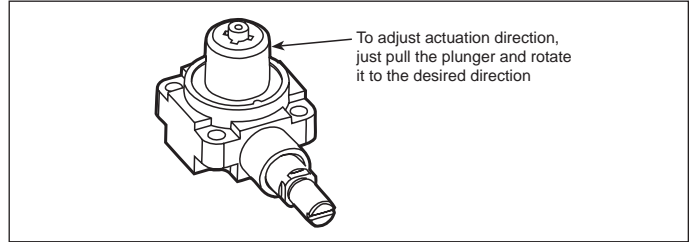


A serrated coupling is used to set the lever free position in 10° increments. This adjustment is achieved by : (1) Unscrewing the combination head screw which holds the lever in place, taking care not to lose any parts; (2) Readjust the assembly and rotate to the desired free position; (3) Re-assemble and tighten the combination screw. (4) Check that the free position is correct for the application and repeat the adjustment procedure if necessary.

NOTE : The lever can be set in 90° increments by removing the lever and rotating it to the desired 90° position.

### EN 50041 side rotary actuator direction adjustment

As furnished, GLS rotary switches will operate when the lever is rotated from either the left or right. They can be field modified to operate in one direction only (Clockwise CW; Counter clockwise CCW) by following these steps : (1) Carefully remove the complete head assembly; (2) Turn the head assembly upside down as shown in the drawing below.



(3) Pull the plunger mechanism out and rotate it through 90° degree increments until the alignment tab points to the desired function (CW, CCW, or CW and CCW). (4) Push plunger mechanism in. (5) Re-assemble the head assembly and re-test the switch in your application.

### Replacement instructions

All levers for side rotaries are available as replacement parts. All basics, except the plug-in, can be replaced. All EN 50041 heads can be replaced. The replacement procedures for these components are straightforward in nature.

### Side rotary levers

Remove the old lever from the product being replaced. On EN 50041 product this is achieved by loosening the Allen screw holding the lever on the shaft. On EN 50047 product this is achieved by unscrewing the combination screw holding the lever on the shaft.

Replace the lever and tighten the Allen screw or combination screw. Retest the switch in its application.

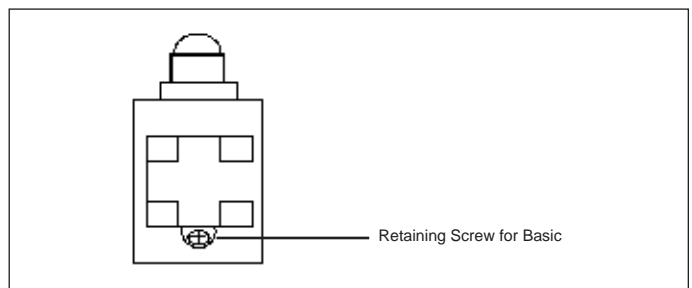
### Heads

All EN 50041 style switch heads can be removed and replaced. Remove the old head by unscrewing the four retaining screws on the head assembly.

Ensure replacement part is identical to one being removed. Re-test the assembly and ensure correct operation.

### Basics

Non plug-in EN 50041 and three conduit EN 50047 body styles. Basic switches can be removed and replaced by following this procedure : (1) Remove the cover from the body; (2) Before disconnecting the switch wiring, carefully note the wiring arrangement for your application, particularly the safety ground connection; (3) Remove the basic switch retaining screw; (4) Remove the old basic and replace it with the same listing; (5) Use the retaining screw to install the new basic - ensure that it is correctly seated in the switch body; (6) Wire the switch terminals as before; (7) Before replacing the cover - ensure that the switch wires are not twisted or otherwise lifted from the basic (to prevent them from becoming trapped when the cover is replaced); then (8) Test the switch in the application.



## Miniature EN 50047 body style

Use same replacement procedure as above except that no retaining screw is involved. The basic switch is secured in the miniature housings by a press fit. To remove an inoperative switch, merely grasp the basic firmly and pull it out of the housing. Insert the new switch in its place. Then wire the new basic as before and test it in the application.

## Plug-in EN 50041 body style

The switch enclosure portion of this two-piece body style plugs into a pre-wired terminal block mounted in the application. Replacement is accomplished by unplugging the old switch enclosure and plugging-in a new switch enclosure (basics are permanently staked in the switch enclosure).

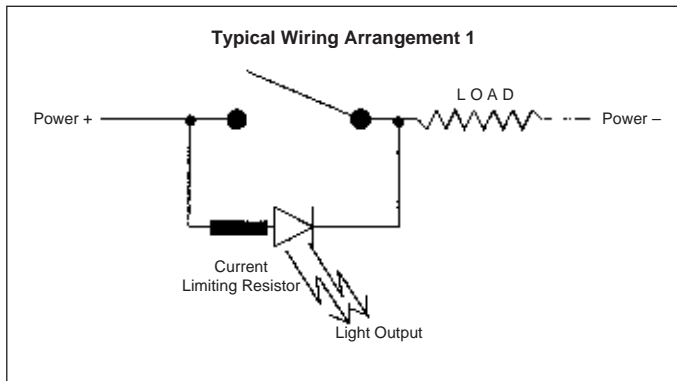
## LED wiring

The GLF, GLG, GLH and GLJ versions of GLS (EN 50041) come complete with LED indicators. These indicators can be wired in a variety of ways. The standard adopted in the GLG (1 LED Plug-in body) and in the GLJ (2 LED Plug-in body) versions is to use green to indicate power available and yellow to indicate operation. Operation can indicate actuator free or actuator operated depending on the wiring arrangement employed.

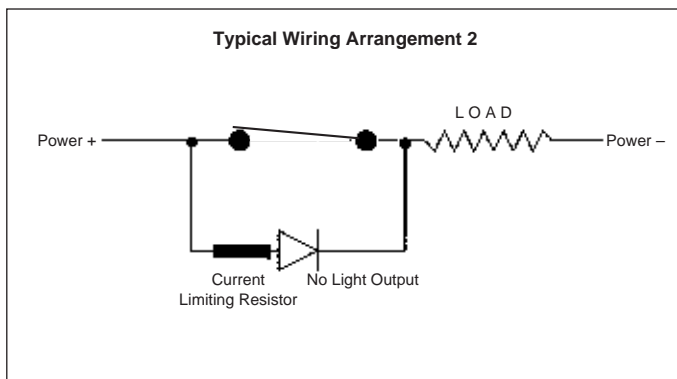
The table below indicates the body styles and indicators offered.

Body	Function	Spec.
GLF...	1 LED	12 → 250Vac and dc Less than 1,5mA draw
GLG...	1 LED plug-in	12 → 250Vac and dc Less than 1,5mA draw
GLH...	2 LED	18 → 30Vdc 7mA typ. current draw
GLJ...	2 LED plug-in	18 → 30Vdc 7mA typ. current draw

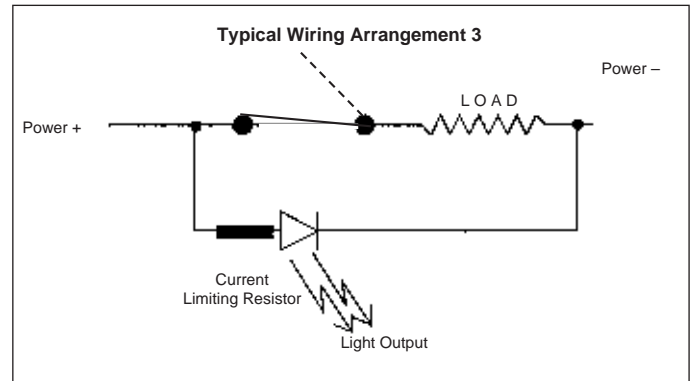
The following wiring arrangements show possible configurations that can be used for the LEDs. Combinations of these arrangements can be used where the dual LED versions of GLS are employed.



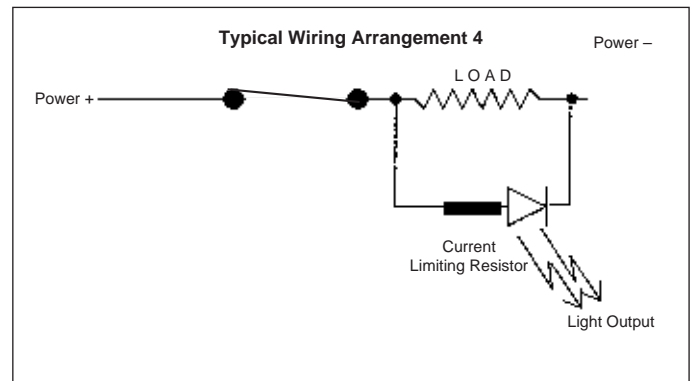
In "Wiring Arrangement 1" you can see that while the main basic is open the current for the LED can flow through the LED (via the load) and the LED illuminates.



In "Wiring Arrangement 2" you can see that while the main switch is closed the current for the LED cannot flow through the LED and the LED will not illuminate.



In "Wiring Arrangement 3" you can see that regardless of the position of the main switch the current for the LED can flow through the LED and the LED will illuminate indicating power available.



In "Wiring Arrangement 4" you can see that when the load is energised the LED will illuminate.

The above circuit ideas give a flavour for what is possible with these versions of GLS. **The LEDs should be treated as "for indication only" devices.**

### Note:

Whilst every effort is made to ensure that the above guidelines are accurate, no responsibility can be accepted for failure to apply good engineering practice to machinery design and use of Honeywell products. Never apply any of the procedures outlined above on live circuits. Ensure that testing of changes is carried out with no risk of injury during tests. These guidelines are produced to help our customers make the right choices in applying our Limit Switches to general applications. Contact your local Honeywell representative if you have any difficulties.

# Connectors

The entire range of GLS switches is available with several industry standard connector types. Specialised industry sectors - such as Automotive Plant Floor- have adopted one or more connector styles and the preferred type varies from car manufacturer to car manufacturer. The range of connectors shown here covers the majority of the Automotive industry's requirements. Connector versions allow the users to rapidly replace a faulty switch without the need to interfere with the Wiring inside the switch or in the application - simply remove the switch and replace. Wiring remains untouched (and therefore there is no need to re-test the wiring).

In order to select the required connector and wiring it is necessary to identify the type of GLS to which the connector is to be fitted and wired. This dictates the first digit of the suffix.

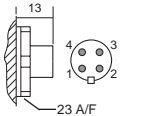
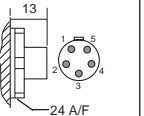
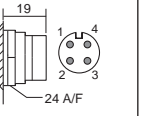
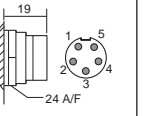
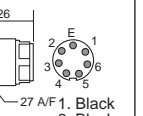
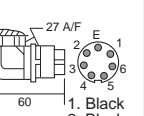
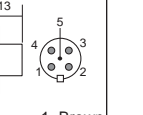
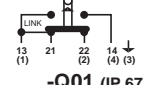
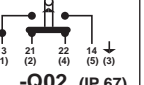
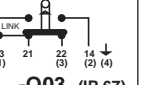
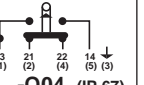
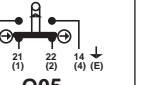
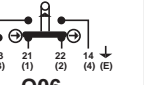
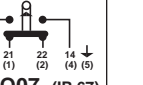
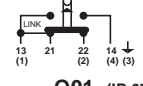
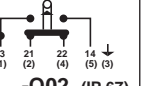
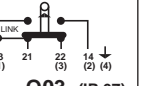
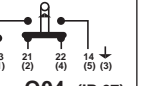
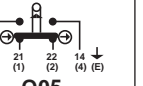
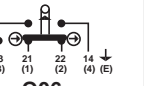
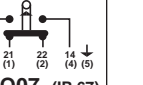
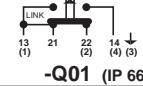
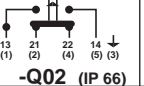
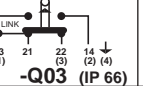
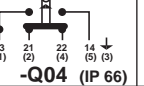
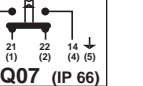
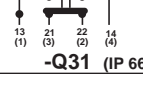
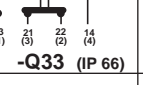
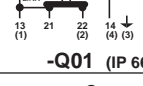
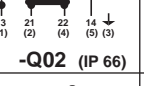
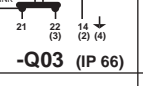
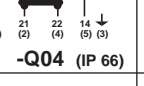
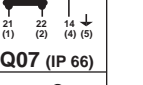
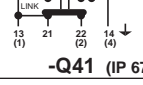
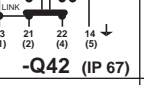
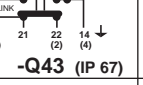
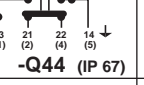

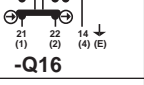
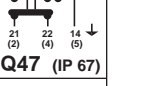
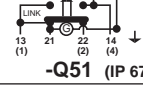
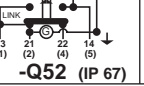
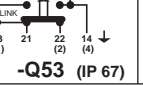
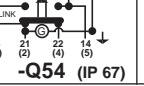
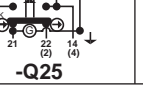
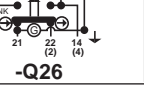
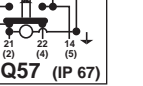
For example;

GLAB01A1B-Q05 is a standard, metal body EN 50041 switch fitted with a 7-pin DIN connector

GLDB01C-Q31 is a miniature, plastic body EN 50047 switch fitted with a 4-pin Micro connector

GLFB03B-Q14 is a standard, metal body, single LED EN 50041 switch fitted with a 5-pin Mini connector

The above represent the most typical wiring arrangements. Other wiring standards may be considered if sufficient demand can be demonstrated.

GLS Type	4 pin micro connector  Imax=4A 250Vac/300Vdc 1. Brown 2. White 3. Blue 4. Black	5 pin micro connector twin keyway  Imax=3A 300V 1. Brown 2. White 3. Blue 4. Black 5. Grey	4 pin mini connector  Imax=9A 250Vac 1. Black 2. Blue 3. Brown 4. White	5 pin mini connector  Imax=9A 250Vac 1. Black 2. Blue 3. Grn/ Yel 4. Brown 5. White	7 pin DIN connector  IP65 Imax=10A 250Vac/300Vdc 1. Black 2. Black 3. Black 4. Black 5. Red 6. Red E. Grn/Yel	7 pin 90° DIN connector  IP65 Imax=10A 250Vac/300Vdc 1. Black 2. Black 3. Black 4. Black 5. Red 6. Red E. Grn/Yel	5 pin micro connector  Imax=4A 30Vac/36Vdc 1. Brown 2. White 3. Blue 4. Black 5. Grey
GLA	 -Q01 (IP 67)	 -Q02 (IP 67)	 -Q03 (IP 67)	 -Q04 (IP 67)	 -Q05	 -Q06	 -Q07 (IP 67)
GLB	 -Q01 (IP 67)	 -Q02 (IP 67)	 -Q03 (IP 67)	 -Q04 (IP 67)	 -Q05	 -Q06	 -Q07 (IP 67)
GLC	 -Q01 (IP 66)	 -Q02 (IP 66)	 -Q03 (IP 66)	 -Q04 (IP 66)	NA	NA	 -Q07 (IP 66)
GLD	 -Q31 (IP 66)	NA	 -Q33 (IP 66)	NA	NA	NA	NA
GLE	 -Q01 (IP 66)	 -Q02 (IP 66)	 -Q03 (IP 66)	 -Q04 (IP 66)	NA	NA	 -Q07 (IP 66)
GLF	 -Q41 (IP 67)	 -Q42 (IP 67)	 -Q43 (IP 67)	 -Q44 (IP 67)	 -Q15	 -Q16	 -Q47 (IP 67)
GLH	 -Q51 (IP 67)	 -Q52 (IP 67)	 -Q53 (IP 67)	 -Q54 (IP 67)	 -Q25	 -Q26	 -Q57 (IP 67)

Wiring not for double pole "20" & "24"