



## GENERAL INFORMATION

ZLS series limit switches are specifically designed for world-wide applications and is supported by Honeywell global resources for sales and after sales service.

ZLS series limit switches are designed to the latest IEC standard are available and include a wide range of EN50041 and EN50047 type switches. Miniature EN50047 limit switches are available in metal and double insulated enclosures and a metal enclosed 3-cable entry version (EN50047 mounting compatible) is also offered.

Standard ZLS switch circuit variations include 2 and 3-circuit versions with forced disconnect mechanism. ZLS includes features to make quick installation easier and safer.

Customers will benefit from Honeywell's vast experience in serving world industries over many years.

Most ZLS versions are interchangeable with almost all other makes of EN50041/47 switches.

## TYPICAL APPLICATIONS

- ☐ Machine tools: metal fabrication equipment, presses, transfer lines and special machinery
- ☐ Material handling equipment: conveyors, elevators, cranes and hoists
- ☐ Packaging machinery and process equipment
- ☐ Textile machinery
- ☐ Construction machinery and equipment, vehicles and lift trucks

## FEATURES

- ☐ Designed to the new IEC standard for world-wide applications
- ☐ Positive opening of normal closed contact meets IEC947-5-1-3 safety standard.
- ☐ UL, CSA, and CE
- ☐ Sealing up to IP65/ IP 67
- ☐ International conduit sizes
- ☐ Design for ease of installation
- ☐ Eleven basic switch versions, Wide choice of actuators

## STANDARDS

IEC 947-1 explains the general rules relating to Low-voltage switchgear and controlgear. The purpose of this standard is to harmonize as much as possible the product performance and test requirements for equipment where the rated voltage does not exceed 1,000 VAC or 1,500 VDC.

IEC 947-5-1 is part 5 of the general rules which relates to Control circuit devices and switching elements. Also within this part there is a section which considers Special Requirements For Control Switches With Positive Opening Operation. Any control switch which has this positive opening operation and conforms to these special requirements will be marked on the outside of the product with this symbol:



The Contact Element Form defines the configuration of the contacts and the number of contacts within the switch. e.g.

Form Za – both contact elements have the same polarity.

Form Zb – the two contact elements are electrically separated.

The Utilization Category defines the type of current carried (AC) Alternating current, (DC) Direct current and the typical application in which the switch is used e.g.

AC15 – Control of Electromagnetic Loads (less than 72VA)

DC13 – Control of electromagnets.

The contact rating Designation relates to the utilization categories and defines the conventional thermal current  $I_{th}$  (A), rated operational current  $I_e$  (A) at rated operational voltages  $U_e$  and the VA rating e.g.

A600 – The “A” denotes the maximum VA rating (AC) and the “600” denotes the maximum rated (AC) voltage.

Q300 – The “Q” denotes the maximum VA rating (DC) and the “300” denotes the maximum rated (DC) voltage.

These IEC standards have been adopted by CENELEC (The European Committee for Electrotechnical Standardization) and have been identified by replacing IEC with EN 60 e.g.

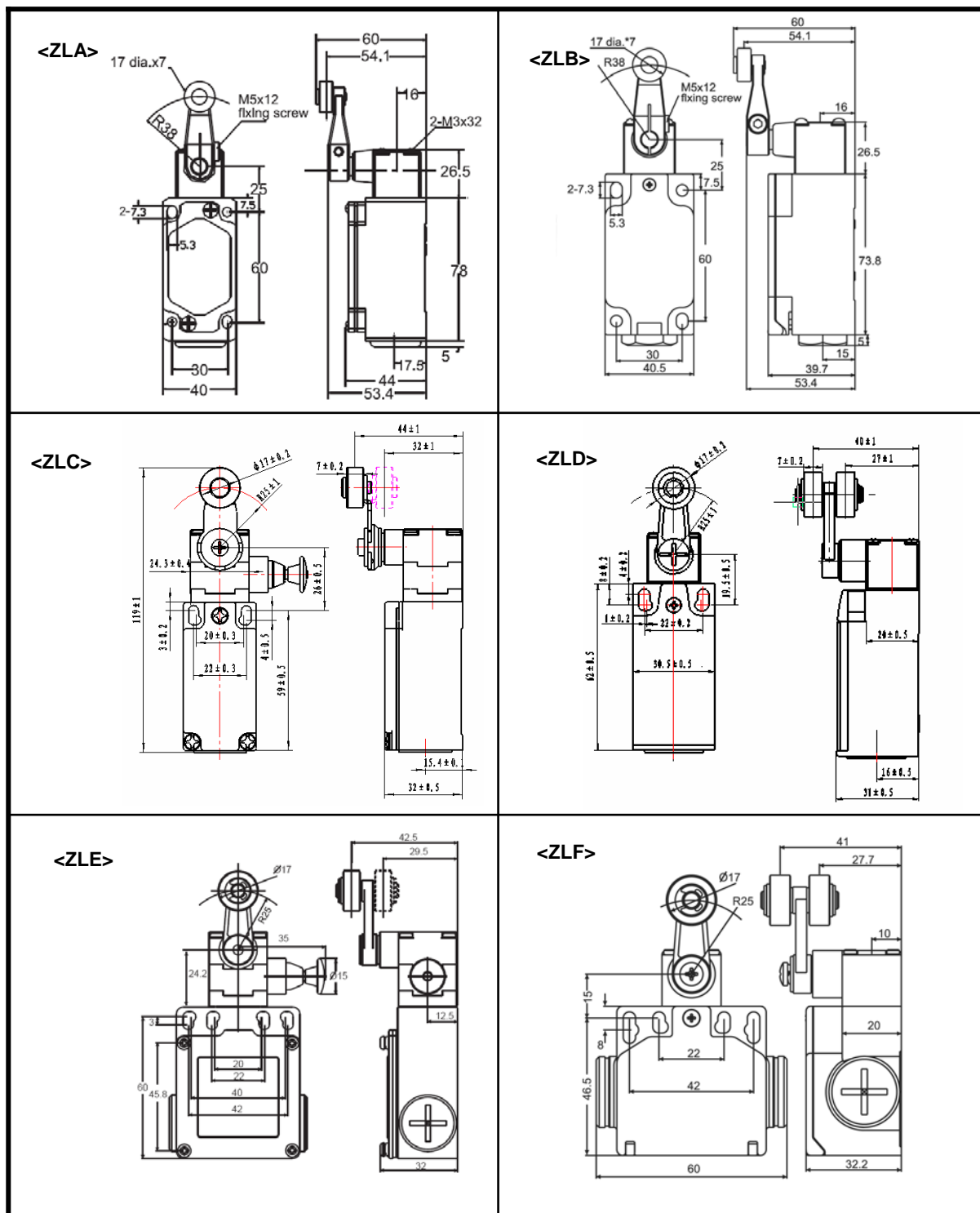
IEC 947-5-1 then becomes EN 60947-5-1.

CENELEC has defined the dimensions and characteristics of two types of limit switch in the standards EN 50041 and EN 50047. These standards relate to Low voltage switchgear and controlgear for industrial use and define the enclosure dimensions, the operating point for various head actuators, the earth terminal requirement, the terminal marking and the minimum degree of IP protection.

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	ZLA	ZLB	ZLC	ZLD	ZLE	ZLF
Standard	EN 50041	EN 50041	EN 50047	EN 50047	EN 50047 3-cable entry	EN 50047 2-cable entry
Enclosure	Metal	Plastic	Metal	Plastic	Metal	Plastic
Operating Temperature	-25~ +120° C	-25~ +80° C	-25~ +80° C	-25~ +80° C	-25~ +80° C	-25~ +80° C
Humidity	<95%RH	<95%RH	<95%RH	<95%RH	<95%RH	<95%RH
Shock/Vibration	10 g / 50 g	10 g / 50 g	10 g / 50 g	10 g / 50 g	10 g / 50 g	10 g / 50 g
Operating Speed	0.05mm-2m/s	0.05mm-2m/s	0.05mm-2m/s	0.05mm-2m/s	0.05mm-2m/s	0.05mm-2m/s
Operating Frequency	120 ops/min	120 ops/min	120 ops/min	120 ops/min	120 ops/min	120 ops/min
Contact Resistance	<25mΩ	<25mΩ	<25mΩ	<25mΩ	<25mΩ	<25mΩ
Degree of Protection	IP67	IP65	IP67	IP65	IP67	IP65
Electrical Rating	AC15 A600 DC13 Q300	AC15 A300 DC13 Q300	AC15 A300 DC13 Q300	AC15 A300 DC13 Q300	AC15 A600 DC13 Q300	AC15 A300 DC13 Q300
Dielectric Strength	2500V	2500V	2500V	2500V	2500V	2500V
Mechanical Life	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>
Electrical Life	5X10 <sup>5</sup>	5X10 <sup>5</sup>	5X10 <sup>5</sup>	5X10 <sup>5</sup>	5X10 <sup>5</sup>	5X10 <sup>5</sup>

## Mounting Dimensions



# ZLS Series Global Limit Switches

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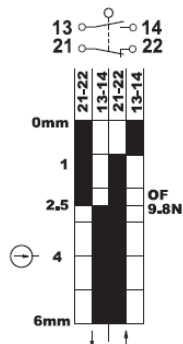
## Selection Guide

ZLA		A	01	A1B	R
Enclosure Type		conduit sizes	Contact block type (see below)	Acuator Style (see next page)	Pull Reset
ZLA	EN50041(Metal)	A 1/2 NPT			
ZLB	EN50041(Plastic)	C M20			
ZLC	EN50047(Metal)				
ZLD	EN50047(Plastic)				
ZLE	3-cable entry (Metal)				
ZLF	2-cable entry (Plastic)				

## Contact Block Type

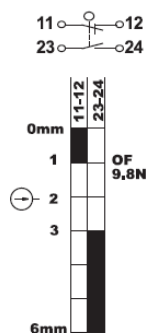
**01**

1NO/1NC  
Snap Action



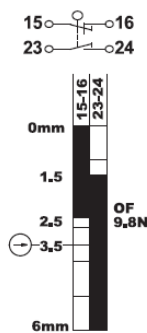
**03**

1NO/1NC  
Break Before Make



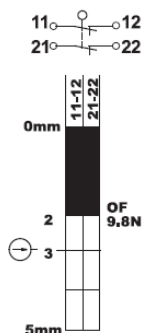
**04**

1NO/1NC  
Make Before Break



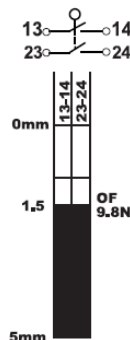
**06**

2NC  
Slow Action



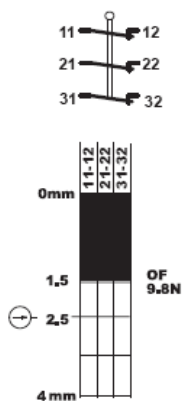
**07**

2NO  
Slow Action



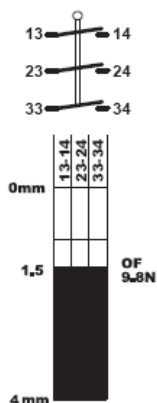
**30**

3NC  
Slow Action



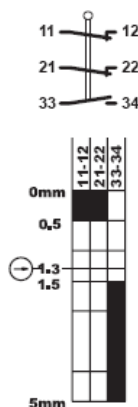
**31**

3NO  
Slow Action



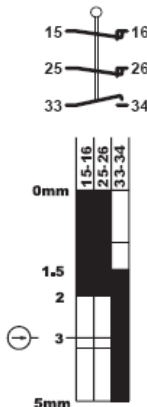
**34**

2NC/1NO  
Break Before Make



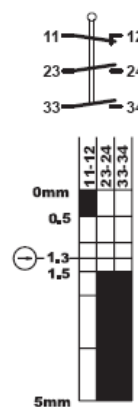
**35**

2NC/1NO  
Make Before Break



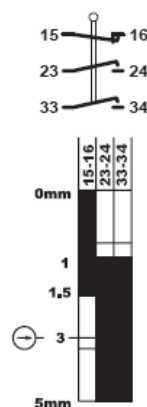
**32**

2NC/1NO  
Break Before Make



**33**

1NC/2NO  
Make Before Break



# ZLS Series Global Limit Switches



	ZLA, ZLB	ZLC, ZLD	ZLE, ZLF
<b>Fixed Side Rotary Lever</b>  <b>A1A (plastic roller)</b> <b>A1B (metal roller)</b>			
<b>Adj. Side Rotary Lever</b>  <b>A2A (plastic roller)</b> <b>A2B (metal roller)</b>			
<b>Adj. Side Rotary Rod</b>  <b>A4J (Metal Rod)</b>			
<b>50mm Side Rotary Lever</b>  <b>A1Y (Fixed)</b> <b>A2Y (Adjustable)</b>			
<b>Yoke Lever</b> <b>V</b>			
<b>Spring Coil: E7B</b>  <b>Plastic Rod, Spring Coil: E6A</b>  <b>Cat Whisker, Spring Coil: E5G</b>			

# ZLS Series Global Limit Switches

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	ZLA, ZLB	ZLC, ZLD	ZLE, ZLF
<b>B (Plunger)</b>			
<b>C (Roller Plunger)</b>			
<b>D (Roller Lever)</b>			
<b>F (Vertical Roller Lever)</b>			
<b>F1 (Roller Lever)</b>			