

# Anatomy of a Limit Switch

## NEMA Versus IEC Limit Switches

The primary difference between NEMA and IEC is the robustness of the switch AND its cost. In many extreme applications, such as heavy machinery, foundries, or even mining, the performance of a NEMA limit switch is an absolute must. However, a NEMA limit switch is typically over twice the price of an IEC limit switch, and in many applications, such as material handling, or ASRS (automated storage and retrieval systems), an IEC limit switch will perform very well and will save you money. So remember, take a close look at your application needs and choose the

most cost effective limit switch for your needs.

How long does a limit switch last?

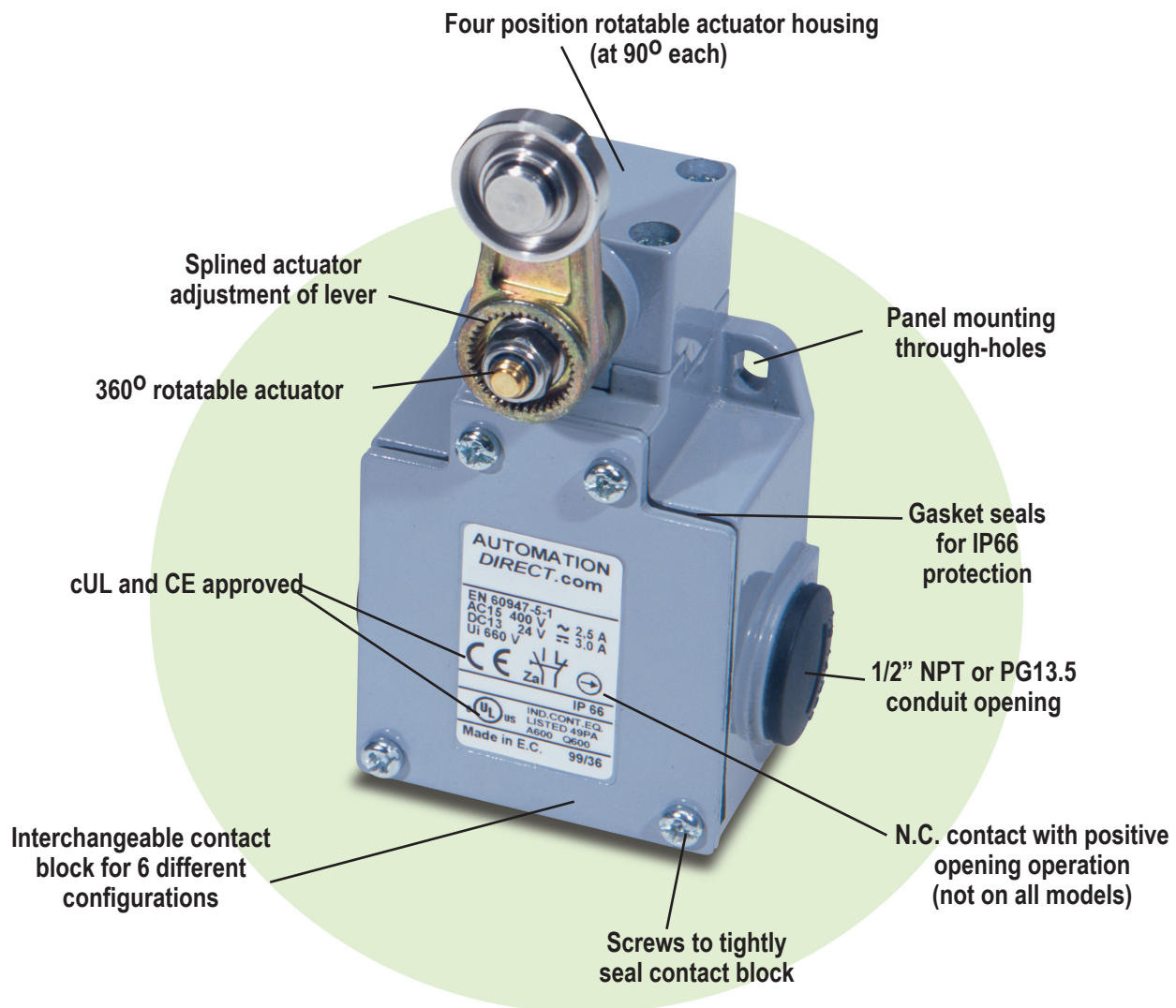
Limit switches are involved in physical contact applications that cause wear and tear on the switch. We recognize this concern and supply only the highest quality, longest lasting limit switches.

In addition, don't be fooled by specifications on the mechanical life of a limit switch. Typically, the electrical life of the contact block is the limiting factor in the overall life of a limit switch. Because of

this, we offer replacement contact blocks for as little as \$4.25. You shouldn't have to pay a lot to maintain your system.

*(Note: The compact series and the Eaton NEMA limit switches have non-replaceable contacts blocks)*

In evaluating the specification, you will find that the AutomationDirect limit switch has an astounding mechanical life of 30 million operations, while the electrical life is an incredible 5 million operations. Compare this to some competitors' specifications and you'll see the AutomationDirect advantage.



*IEC model shown. Features of the other limit switch series may vary.*

# Limit Switches Selection Guide



Series	F25 Series	ABM Series	ABP Series
<b>Description</b>	Eaton NEMA Limit Switches	Heavy duty IEC	Double-insulated, non-metallic IEC
<b>Material</b>	Die-Cast Zinc Alloy	Aluminum	PBT (plastic)
<b>Degree of Protection (IEC529)</b>	IEC IP67	IEC IP66	IEC IP65
<b>Maximum Switching Frequency</b>	8000 operations per hour	Contact blocks: all two cycles per second	Contact blocks: all two cycles per second
<b>Mechanical Service Life</b>	Side rotary: 13 million operations minimum Side and Top Push: 10 million operations minimum Wobble: 10 million operations minimum	25 million cycles	25 million cycles
<b>Contact Configuration</b>	SPDT, DPDT snap-acting	One snap-action set of N.O. / N.C. contacts. (Optional contact blocks with other configurations are available)	One snap-action set of N.O. / N.C. contacts. (Optional contact blocks with other configurations are available)
<b>Conduit Opening</b>	1/2 in NPT	One and three cable holes, PG 13.5 or 1/2 NPT	One cable hole, PG 13.5 or 1/2 NPT
<b>Connection</b>	AWG #12 through #18 AWG wire	2x2.5 mm <sup>2</sup> (AWG14) to 2x0.5 mm <sup>2</sup> (AWG 18)	2x2.5 mm <sup>2</sup> (AWG14) to 2x0.5 mm <sup>2</sup> (AWG 18)
<b>Agency Approvals</b>	F25Axx versions are CE-approved; All versions cULus.	CE markings for applicable CE Directives UL certified (UL508), File E191072. RoHS	CE markings for applicable CE Directives UL certified (UL508), File E191072. RoHS



Series	AAP Series	AEM Series	Precision Series
<b>Description</b>	Double-insulated, non-metallic mini-DIN IEC	Compact 25mm mount	Precision touch
<b>Material</b>	PBT (plastic)	Zinc Alloy	Stainless Steel
<b>Degree of Protection (IEC529)</b>	IEC IP65	IEC IP67	IEC IP40 to IP67, depending on model
<b>Maximum Switching Frequency</b>	Contact blocks: all two cycles per second	Contact blocks: all one cycle per second	N/A
<b>Mechanical Service Life</b>	25 million cycles	5 million or 10 million cycles, depending on model	1 million to 10 million cycles, depending on model
<b>Contact Configuration</b>	One snap-action set of N.O. / N.C. contacts. (Optional contact blocks with other configurations are available)	One snap-action set of N.O. / N.C. contacts. One slow-action set of N.O. / N.C. contacts.	One set of N.O. or N.C. contacts.
<b>Conduit Opening</b>	One cable hole, PG 11 or 1/2 NPT	N/A	N/A
<b>Connection</b>	2x2.5 mm <sup>2</sup> (AWG14) to 2x0.5 mm <sup>2</sup> (AWG 18)	3 meter cable Center or Right Exit; M12 Quick-disconnect 5-Pin Center or Right Exit	2 meter cable, 3 meter cable, or 0.5 m core wire, depending on model.
<b>Agency Approvals</b>	CE markings for applicable CE Directives UL certified (UL508), File E191072. RoHS	CE markings for applicable CE Directives UL certified (UL508), File E191072. RoHS	N/A