



# VisiPacT Safety Switches

Power isolation solutions for daily activities and emergencies







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# VisiPacT<sup>™</sup> Safety Switch



## Setting the standard for performance, quality, and reliability in today's commercial and industrial applications



First introduced in 1907, Square D<sup>™</sup> brand safety switches have a long history of leadership in safety and performance. Since then, Schneider Electric has pioneered many innovations to help maximize the lifetime value of your safety switches.

VisiPacT safety switches play a crucial role in today's commercial and industrial settings. They isolate power in daily activities and provide an effective way to interrupt power in an emergency. Two primary applications for safety switches are as a lockout line of sight disconnect and as a circuit isolation device.

#### **Key Customer Applications**

	Sight Disconnect for Motors*	Branch Circuit Protection	Service Entrance
Industrial Facilities	<b></b>	<b>~</b>	
Retail Construction	<b></b>	<ul> <li></li> </ul>	<b></b>
Water Wastewater	<b></b>	<ul> <li></li> </ul>	<b></b>
Data Centers	<b></b>	<ul> <li></li> </ul>	
Automotive	<b></b>	<b>~</b>	
Packaging	<b></b>	<ul> <li></li> </ul>	
Pharmaceutical, Food, Beverage	<b></b>	<ul> <li></li> </ul>	
Commercial OEM	<b></b>	<b>~</b>	

\* Occupational Safety and Health Administration (OSHA) compliance.



VisiPacT safety switches are designed to outperform other switches in a wide range of demanding applications.



## Three Times the Life — Three Times the Value

The performance of safety switches is important to the safe and profitable operation of many industrial settings. In addition, requirements from organizations such as OSHA have increased the use of safety switches in many commercial and industrial facilities.

The useful life of a safety switch is less than two years based on NEMA® KS-1 life test requirements, in lockout/tag out applications where a switch is operated just once per hour, 24 hours a day, seven days a week. For switches in these high-use applications, durability is key.

VisiPacT safety switches provide significantly higher levels of mechanical endurance than NEMA KS-1 require. This translates to improved reliability in a production environment. In fact, the standard for the design life of VisiPacT safety switches is a **minimum of three times the NEMA requirement**. No competitor comes close to the performance offered by VisiPacT safety switches.

#### **Designed for the Best Performance**

A key performance benefit of the VisiPacT safety switch is its ability to break load. A locked motor can draw six to eight times motor full-load current. In an emergency situation, it's important to have a switch with enhanced load break capability. A key element of VisiPacT safety switches is their blade and jaw construction designs built to easily manage heavy motor loads and arc interruptions.

#### Potential Cost Avoidance Due to Square D Switch Life

Operations of switch/ 8-hour shift	Operations per year in 24/7 environment	Life of Square D switch in years <sup>(1)</sup>	Life of competitive switch in years <sup>(1)</sup>	Cost avoidance by using Square D <sup>(2)</sup>
1	1,095	45.7	13.7	\$190
2	2,190	22.8	6.8	\$380
3	3,285	15.2	4.6	\$570
4	4,380	11.4	3.4	\$760
5	5,475	9.1	2.7	\$950

<sup>(1)</sup> Life determination based on 50,000 operations for 30 A and 15,000 operations for competition. Actual number of operations will vary based upon electrical load, duty cycle, and environmental conditions.

<sup>(2)</sup> Does not include cost of lost productivity. Switch cost replacement: labor = 2 hour @ \$45/hour cost of switch @ \$100. Maximum usable life of switch assumed to be 20 years.



VisiPacT safety switches are built for use in the United States, Canada, and Mexico and are UL Listed in all three countries.





## The quality you have come to rely on

#### Safety First

VisiPacT safety switches are, above all else, built to increase safety. Visible blades are an important feature, and they must be visible in real-world conditions to visually verify that the downstream circuit is de-energized. Our switch blades are easily visible, even in the lessthan-ideal lighting conditions where electrical equipment is often installed.

A viewing window adds another degree of safety through visual verification of switch position without the need to open the door.

In addition, VisiPacT safety switches include an oversized arc suppressor, which breaks the load by effectively attenuating the arc for a clean interruption.

All handles on VisiPacT safety switches (except on NEMA 4X) come standard with hook stick compatibility to add an extra layer of safety when exercising the switch.

#### **Designed for Long-Term Durability**

Rugged construction and corrosion protection provide the industry's longest lasting switches. Galvannealed steel in all single-throw Type 3R and 12 enclosures provides superior corrosion protection. Type 4X seam-welded enclosures help extend equipment life by providing excellent environmental and corrosion protection without the use of a silicone sealer, which can be incompatible with some manufacturing processes.

Managing temperatures inside the switch is essential to providing greater service life. VisiPacT safety switches feature more copper than other switches available on the market today. This larger amount of copper is one of the reasons VisiPacT safety switches have lower operating temperatures.

Heat is not the only factor that impacts switch life. The enclosed operating mechanism design of VisiPacT safety switches reduces the amount of dust and other contaminants that shorten the mechanism's operating life.

#### A Full Range of Accessories

VisiPacT safety switches feature a complete offering of accessories, available field-installable. Field-installable accessory options include neutral kit, ground lugs, electrical interlocks, Class "R" fuse rejection kits, compression terminals, and conduit hubs.

VisiPacT offers factory modifications on the Type 12 enclosures and Type 4X enclosures. The factory modifications are key interlocks, lock-on feature, line &/or load voltage monitors, and remove standard viewing window.

#### **Efficient Installation**

Our time-saving design features make installation quick and easy.

VisiPacT safety switches feature quick-release cover latches that are easier to operate than screwfasteners. On Type 4X and Type 12 switches, this design feature ensures a better gasket seal — a critical feature in adverse operating conditions — than is available with designs that rely on screwfastened covers.

### Mechanical Endurance Requirements for UL, NEMA, and VisiPacT Safety Switches

Number of Operations <sup>(3)</sup>			
Switch Rating (Amps)	UL 98	NEMA KS 1 Heavy-Duty	VisiPacT Reqmts.
30 and 60	10,000	15,000	50,000
100	10,000	14,000	50,000
200	8,000	12,000	36,000(4)

<sup>(3)</sup> Actual number of operations may vary based on environmental conditions.

<sup>(4)</sup> Single-throw switches only.

#### Short-Circuit Current Ratings

UL Listed Fuse Class	Heavy-Duty RMS Sym Amps
Plug	N/A
н	10,000
К	10,000
J	200,000
R	200,000
Т	200,000
L	200,000



#### **Cost-Saving Maintenance**

Advanced maintenance features extend switch life and reduce downtime, saving both labor and material costs. The VisiPacT safety switch modular design allows the replacement of all interior worn or damaged components.

Field-replaceable components such as interior line bases, load bases, and mechanisms are available. Moreover, handles and lock plates are also replaceable if they are damaged or vandalized.

In addition, VisiPacT Type 4X and 12 safety switches come standard with fuse pullers, increasing the convenience and safety of maintenance. Fuse pullers are also fieldinstallable on certain models.

#### **Operation and Safety**

Nothing is as important in the design of a switch as understanding how it will be used. To ensure safety switches continue to meet the needs of commercial and industrial applications, products are engineered with the operational procedures and safe work practices of customers in mind.

#### **Superior Handle Design**



The VisiPacT insulated switch handle is an industry exclusive. It is made from a high-strength polymer chosen for weather resistance, durability, and impact strength, and features a hook stick loop for additional distance and insulation when needed.

The two-color, position-indicating handle on heavy duty safety switches enhances operator safety by aiding in visual recognition of switch position from an angle or at a distance. The simple concept of having contrasting colors on the handle enhances the ability of the operator to determine quickly the position of the switch, even in low-light conditions. In an emergency, it is vital that switch position be

accurately recognizable. Plus, an embossed on/off marking is a permanent indication of the switch position and cannot be removed or vandalized.

#### **Tamper-Resistant Enclosure**

Resolving lockout issues is a priority with major industrials. VisiPacT safety switches have an extruded lock plate feature that helps prevent tampering with lockout devices. The lock plate opening is extruded to reduce the possibility of lockout devices being removed by nonauthorized personnel.

With the use of the handle lock plate, the switch can be locked in the OFF position with up to three padlocks to comply with OSHA lockout requirements. The safety switch can also be modified so that the switch can be locked in the ON position, if required by the application.

Heavy-duty dual cover interlocks are key safety features on single-throw and double-throw heavyduty switches. These prevent the opening of the cover when the switch is ON or turning the switch ON when the cover is open. Qualified personnel can also defeat this feature allowing them to perform any necessary testing.



# Catalog numbering system for safety switches

3

 $\mathsf{VH}$ 

2



#### Enclosure

RB

Ν

No Suffix = Type 1 AWK = Type 12<sup>(6)</sup> (without knock-out) DS = Types 4, 4X, 5 (304 stainless steel) SS = Types 4, 4X, 5 (316 stainless steel) R = Type 3R **RB** = Type 3R (Type B hub provision)

<sup>(6)</sup> All Type 12 shipped with removable drip hole to convert to Type 3R applications

#### **Miscellaneous**

GL = Ground lugs SPLO = Lock on KI = One-key interlock KIKI = Two-key interlocks

#### Type of Switch

Fusible:

L = Light-Duty D = General Duty VH = Heavy-Duty DT = Double-Throw

#### Non-fusable:

DU = General-Duty VHU = Heavy-Duty DTU = Double-Throw

#### Blades Switchable Poles

1 = One-pole

- 2 = Two-pole
- 3 = Three-pole
- 4 = Four-pole
- 6 = Six-pole

#### Voltage Rating -

1 = 120 Vac (Plug fuse)
2 = 240 Vac
6 = 600 Vac
For DC ratings, see the latest catalog listing.

#### Ampere Rating

<b>1</b> = 30 A	5 = 400 A
2 = 60 A	6 = 600 A
3 = 100 A	7 = 800 A
4 = 200 A	8 = 1,200 A

#### Neutral -

- N = Factory-installed neutral (neutrals are field-installable on most general-duty and heavy-duty safety switches)
- B = Factory-installed and bonded to enclosure neutral<sup>(5)</sup>

## The most complete line of switches in the industry

	Amp Range	Vac Max.	Vdc Max.	Fusible	Enclosure Type
General-Duty	30 – 800	240	_	Fusible and Non-Fusible	Type 1, 3R
VisiPacT Heavy-Duty	30 – 200	600	600	Fusible and Non-Fusible	Type 1, 3R, 4, 4X Stainless Steel, 5, 12
Heavy-Duty	400 – 1200				
Four-Pole Heavy-Duty	30 - 600	600	600	Fusible and Non-Fusible	Type 1, 3R, 4X Stainless Steel, 12
Six-Pole Heavy-Duty	30 – 200	600	_	Fusible and Non-Fusible	Type 1, 3R, 4X Stainless Steel, 12
Double-Throw	30 – 100	600	600	Fusible and Non-Fusible	Type 1, 3R, 4X Stainless Steel, 12
Double-Throw	200 - 600	600	250	Non-Fusible	Type 1, 3R, 4X Stainless Steel, 12
Hazardous Location Switches	60 – 225	600	250	Non-Fusible	Type 7 and 9 — Divisions 1 and 2 of the following: Class 1, Groups C and D, Class 2, Groups E and F; on Class 3, Hazardous Locations as defined in NEC <sup>®</sup> Article 500

The MD motor disconnect switch serves as a local on/off switch for a motor when the motor branch circuit protection is in a central enclosure. It is in a compact NEMA 4X enclosure and is available in 30 A and 60 A versions.

Type 1 (indoor), Type 3R (outdoor), Type 4, 4X, 5 (watertight and dust-tight, corrosion-resistant) (cast aluminum, stainless steel, glass polyester, or Krydon), Type 12 (mill and foundry type).

Switches are UL Listed (UL 98 Enclosed Switches) and meet or exceed the NEMA KS1 standard unless otherwise noted.

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