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KATKO'S EASY TO USE RANGE OF ENCLOSED SWITCHES

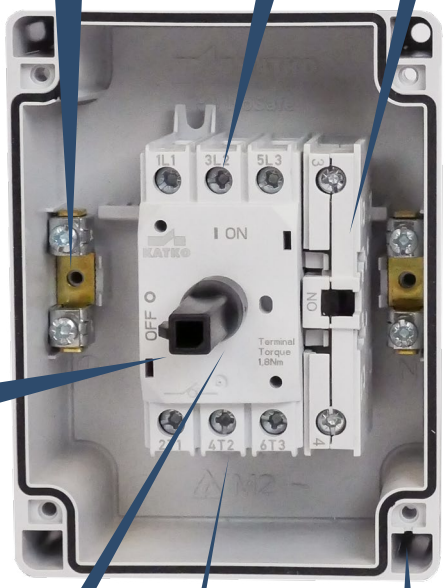
Polycarbonate (IP66) or ABS (IP65) enclosure. High resistance against UV and many chemicals. Available in grey/black or yellow/red.

5 cable entries:
M20 & M25 mm as standard on the top and bottom and M20 on the base. Knock-out glands are easy to open.

Neutral & earth terminals
Fitted on 3 pole switch.
1, 2 and 4P switches only earth.

Side-mounted auxiliary contact, 1NO or 1NC

Large cable terminals
1,5 - 16 mm² up to 40A



Door interlock with defeat mechanism.

Self-extinguishing material and excellent insulating properties.

Padlocking in OFF-position prevents access to the actuator.

Reliable position indication.

Provision for 3 padlocks.

Stainless steel screw fixing.

Fully rated Load Break Switch. Breaking capacity of 8xAC23 rating. Back up fuse rating to match motor manufacturers recommendation.

Enclosure mounting screws (4,5 mm in diameter) isolated from the inside housing keeping the integrity of the IP65/ IP66 rating.

'Plug in' switch. Enables unplugging the switch for easy cabling.

SWITCHES ACCORDING TO IEC 60 947-3.

SWITCH

A mechanical switching device capable of making, carrying and breaking currents under normal circuit conditions which may include specified operating overload conditions and also carrying for a specified time currents under specified abnormal circuit conditions such as those of short circuit.
Note: A switch may be capable of making, but not breaking, short-circuit currents.

DISCONNECTOR

A mechanical switching device which, in the open position, complies with the requirements specified for the isolating function.
Disconnector: (working definition) device without on-load making and breaking capacity.

SWITCH DISCONNECTOR / LOAD BREAK SWITCH

A switch that can make, carry, and break currents under normal circuit conditions, and when in the open position, complies with the isolation requirements of a disconnector.

UTILIZATION CATEGORY

Utilization category	Use / Application
AC-20A	Connecting and disconnecting under no-load.
AC-21A	Switching of resistive loads including moderate overloads
AC-22A	Switching of mixed loads, inductive and resistive loads including moderate overloads
AC-23A	Switching of motor loads or other highly inductive loads

PROTECTION AGAINST OVERVOLTAGE

U_{imp} (Impulse withstand voltage) defines the device's use in abnormal network conditions with overvoltage due to lightning on overhead wires etc.

This characteristic also defines the device's dielectric quality. Overvoltage protection is ensured by choosing the equipment according to U_{imp}. The 4 impulse withstand categories of use at 400V/ 690V (IEC 60364-4-44) are:

Category	U_{imp}	Applications
1	2,5 kV	specially protected equipment
2	4 kV	Portable tools, motors, etc.
3	6 kV	Equipment placed in distribution networks
4	8 kV	Equipment placed at the head of an installation.

The U_{imp} rating for most of the Katko switches is 8kV.

INSTALLATION ENVIRONMENT TEMPERATURE

To assure the best of operation of KATKO switches the ambient air temperature of installation environment should be in the range of -40°C to + 60°C.

When the ambient temperatures exceed +40°C, the maximum load of the switch may have to be derated. Please contact KATKO for assistance.

CONFORMITY TO STANDARDS

Katko switches are designed to comply with both national and international standards.
-Switches tested acc. to IEC 60947
-AC 23A / 690V ratings
-50-100 kA R.M.S values
-CB certificates
-UL (US) and $_{c}$UL listed (Canada): UL 60947-4-1A
-Fuse holder acc. to IEC 60269 / UL 4248-1

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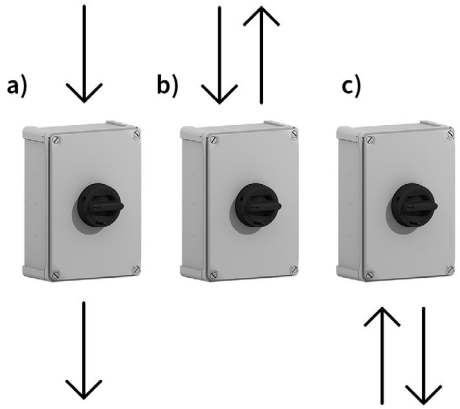
SAFETY SWITCHES / ISOLATORS 10 - 800 A

- Tested according to IEC 60947-3 and UL 60947-4-1A
- CB certificates
- VDE certificates
- Comply with ISO 9001 and ISO 14001
- AC-23A / 690V ratings
- Multiple break with silver rivets
- Door interlock
- Lockable handle
- Reliable position indication
- Standard grey/black and yellow/red series
  grey/black= grey cover, black handle
  yellow/red= yellow cover, red handle
- Standard models 3P, 4P, 6P and 8P
- 1P and 2P available

KATKO SWITCHES - FOR HEAVY DUTY

- Superior life span even in most demanding environments such as papermills, chemical plants, steelworks and food processing plants.

NOTE: When ordering switches with ampere rating 200A or higher, please define the intended cabling directions if other than a) shown in the picture below.



RECOMMENDED ENCLOSURE FOR DIFFERENT CABLE SIZES

Polycarbonate Enclosures	Cable size mm2	Sheet Steel Enclosures	Cable size mm2	Aluminium Enclosures	Cable size mm2	Stainless Steel Enclosures
M1, M2	3x2,5+2,5	T3	3x2,5+2,5	A2	3x2,5+2,5	RA2
M1, M2	3x6+6	T3	3x6+6	A2	3x6+6	RA2
M3	3x10+10	T3	3x10+10	A4	3x10+10	RA4
M3	3x16+16	T3	3x16+16	A4	3x16+16	RA4
M4	3x35+16	T4	3x35+16	A4	3x35+16	RA5
M4	3x50+25	T5	3x50+25	A5	3x50+25	RA5
MF01	3x70+35	T5	3x70+35	A5	3x70+35	RA5
MF03, MF04	3x95+50	T6	3x95+50	A6	3x95+50	R6
MF03, MF04	3x120+70	T6	3x120+70	A6	3x120+70	R6
MF03, MF04	3x185+95	T6	3x185+95	A6	3x185+95	R6
MF03, MF04	3x240+120	T7/T10A	3x240+120	A6	3x240+120	R7-R10

ALWAYS CHOOSE THE RIGHT SWITCH FOR THE RIGHT PURPOSE!

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SAFETY SWITCHES / ISOLATORS 10-800 A
TECHNICAL DATA

SAFETY SWITCHES / ISOLATORS		10 A	16 A	25 A	40 A	63 A	80 A	100 A	125 A	160 A
Rated insulation voltage, Ui (V)		800	800	800	800	800	800	800	800	800
Rated thermal current, Ith (A)		20	25	40	63	80	100	125	160	200
Rated thermal current, Ithe (A)***		20	25	40	63	80	100	125	160	200
Nominal values with cable size (mm2)***		2.5	4	10	16	25	35	70	70	95
Rated operational current, Ie (A)										
AC-21A	400/415V	10	25	40	40	80	100	125	160	160
	500V	10	25	40	40	80	100	125	160	160
	690V	10	25	40	40	80	100	125	160	160
AC-22A	400/415V	10	16	25	40	63	80	100	125	160
	500V	10	16	25	40	63	80	100	125	160
	690V	10	16	25	40	63	80	100	125	160
AC-23A	400/415V	10	16	25	40	40	63	100	125	160
	500V	10	16	25	25	40	40	63	80	100
	690V	10	16	25	25	40	40	63	80	100
Rated operational power for 3-phase (1500 r.p.m.) squirrel cage induction motors (kW)										
AC-23A	400/415V	5.5	7.5	11	22	22	30	55	55	90
	500V	5.5	7.5	15	15	30	30	37	55	55
	690V	7.5	11	22	22	37	37	55	75	90
Rated fused short circuit current										
Back-up fuse (A)		25	25	25	40	80	80	160	160	160
R.M.S. value, Ik (kA)		50	50	50	25	50	50	65	65	65
Peak value (kA)		3.8	3.8	3.8	4.5	8.2	8.2	15	15	15
Impulse withstand voltage, Uimp (kV)		8	8	8	8	8	8	8	8	8
Rated short circuit making capacity, Icm (kA)										
	690V	1	1	1	1	3.1	3.1	8	8	8
Rated short time withstand current (1 s), Icw (kA)										
	690V	0,7	0,7	0,7	0,7	2.0	2.0	5	5	5
Rated breaking capacity, Icn (A)										
AC-23A	400/415V	80	128	200	320	320	504	640	1000	1280
	500V	80	128	200	200	320	320	504	640	800
	690V	80	128	200	200	320	320	504	640	800
Electrical endurance (operations)		3000	3000	3000	3000	3000	3000	2000	2000	2000
Mechanical endurance (operations)		50000	50000	50000	50000	50000	50000	16000	16000	16000
Terminals / Bolt size Cu (mm^2)		1.5-16	1.5-16	1.5-16	1.5-16	2.5-35	2.5-35	6-70	6-70	6-70
Max terminal torque (Nm)		1.8	1.8	1.8	1.8	2.5	2.5	6	6	6

1) KEx x200 - KEx x250 2) KEx x200C - KEx x250C
*1000V
**50kA with 315A fuse
***Tested in standard enclosure and cable size in this catalog

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SAFETY SWITCHES / ISOLATORS 10-800 A
TECHNICAL DATA

200 A[1)]	200 A[2)]	250 A[1)]	250 A[2)]	315 A	400 A	630 A	800 A	SAFETY SWITCHES / ISOLATORS
1000	1000	1000	1000	1000	1000	1000	1000	Rated insulation voltage, U_i (V)
250	200	315	250	315	400	630	800	Rated thermal current, I_{th} (A)
250	200	315	250	315	400	630	800	Rated thermal current, Ithe (A)***
95	95	120	120	185	240	2x185	2x300	Nominal values with cable size (mm²)***
								Rated operational current
200	200	250	250	315	400	630	800	400/415V — AC-21A
200	200	250	250	315	400	630	800	500V — AC-21A
200	200	250	250	315	400	630	800	690V — AC-21A
200	200	250	250	315	400	630	800	400/415V — AC-22A
200	-	250	-	315	400	630	800	500V — AC-22A
200	-	250	-	315	400	630	800	690V — AC-22A
200	200	250	250	315	400	630	800	400/415V — AC-23A
200	-	250	-	315	400	630	800	500V — AC-23A
200	-	250	-	315	400	630	800	690V — AC-23A
								Rated operational power for 3-phase (1500 r.p.m.) squirrel cage induction motors (kW)
110	110	132	132	160	200	355	400	400/415V — AC-23A
132	-	160	-	200	250	400	560	500V — AC-23A
160	-	250	-	315	355	630	800	690V — AC-23A
								Rated fused short circuit current
250	250	250	250	400	400	630	800	Back-up fuse (A)
100**	50	100**	50	100	100	100	100	R.M.S. value, I_k (kA)
26	22	26	22	42	42	76	76	Peak value (kA)
12	8	12	8	12	12	12	12	Impulse withstand voltage, U_{imp} (kV)
								Rated short circuit making capacity, I_{cm} (kA)
14	7	14	7	27,5	27,5	60	60	690V
								Rated short time withstand current (1 s), I_{cw} (kA)
8*	6	8*	6	13.5*	13.5*	28*	28*	690V
								Rated breaking capacity, I_{cn} (A)
1600	1600	2000	2000	2520	3200	5040	6400	400/415V — AC-23A
1600	-	2000	-	2520	3200	5040	6400	500V — AC-23A
1600	-	2000	-	2520	3200	5040	6400	690V — AC-23A
2000	2000	2000	2000	2000	2000	2000	2000	Electrical endurance (operations)
16000	16000	16000	16000	10000	10000	10000	10000	Mechanical endurance (operations)
M8	M8	M8	M8	M10	M10	M12	M12	Terminals / Bolt size Cu (mm²)
15-22	15-22	15-22	15-22	30-44	30-44	50-75	50-75	Max terminal torque (Nm)

*1000V
**50kA with 315A fuse
***Tested in standard enclosure and cable size in this catalog