

# Rotary Cam Switches

## Technical Information Technical Data

### Rated data

Rated data			P110	M220 P220	M221* P221*	P225	M225 P226*	T225	S432	S440	S606	S608	S612	S825
Operational voltage $U_e$	(V AC)		440	690	690	690	690	690	690	690	690	690	690	690
Impulse withstand voltage $U_{imp}$	(kV)		4	4	4	6	6	6	6	6	6	6	6	6
Overvoltage category			III	III	III	III	III	III	III	III	III	III	III	III
Pollution degree			3	3	3	3	3	3	3	3	3	3	3	3
Uninterrupted current $I_u / I_{th} / I_{the}$	(A)		10	20	20	25	25	32	50	63	80	100	160	315
Load carrying capacity in intermittent operation (class 12)	(AB)		DF: 60% = $1.3 \times I_e / 40\% = 1.6 \times I_e / 25\% = 2 \times I_e$											
Breaking capacity	220–240V	(A)	90	180	180	255	255	370	520	550	600	700	900	1800
	380–440V	(A)	70	150	150	230	230	300	430	500	550	600	850	1650
	500–690V	(A)	—	90	90	270	270	210	280	380	420	450	340	350
short-circuit rating (max. fuse)	(gL)		10	20	20	25	25	32	50	63	80	100	160	315
Conditional short-circuit current	( $kA_{eff}$ )		3	10	10	10	10	15	20	20	25	25	25	25
Isolating characteristics (to EN 60947)	(up to ... V AC)		480	480	480	690	690	690	690	690	690	690	690	690
Switching angle			30° / 45° / 60° / 90°											
Contacts (Current paths) (max.)			16	24	24	24	24	24	24	24	24	24	24	24
Current heat loss per contact at $I_u$	(W)		0.3	0.65	0.65	0.75	0.75	1	3	3.5	4	5	11	28.5
Terminal capacity														
solid or stranded	min.	(mm <sup>2</sup> )	0.75	1	1	1.5	1.5	2.5	2.5	4	6	10	10	185 <sup>1</sup>
	max.	(mm <sup>2</sup> )	1.5	2.5	2.5	4	4	6	10	16	25	35	70	185 <sup>1</sup>
flexible or multiwire (including ferrule)	min.	(mm <sup>2</sup> )	0.75	1	1	1.5	1.5	1.5	2.5	2.5	6	10	10	185 <sup>1</sup>
	max.	(mm <sup>2</sup> )	1.5	2.5	2.5	2.5	2.5	4	6	10	16	25	50	185 <sup>1</sup>
American Wire Gauge	(AWG)		16	12	12	10	10	10	6	4	4	1/0	2/0	350MCM
Thread dimensions for terminal screw			M2.5	M3	M3	M3.5	M3.5	M4	M5	M5	2×M4	2×M5	2×M6	M12
Terminal tightening torque	min.	(Nm)	0.4	0.5	0.5	0.8	0.8	1.2	2	2	1.2	2	2.5	14
	max.	(Nm)	0.6	1	1	1.5	1.5	2.5	4	4	2.5	4	6	25
Operational current $I_e$														
AC-21A	220–500V	(A)	10	20	20	25	25	32	50	63	80	100	160	315
	660–690V	(A)	—	20	20	25	25	32	50	60	80	80	125	125
AC-22A	440V	(A)	6	16	16	22	22	30	44	50	65	80	120	285
cUL General Use	300V AC	(A)	10	20	20	25	25	35	55 <sup>1</sup>	70 <sup>1</sup>	95 <sup>1</sup>	110 <sup>1</sup>	175 <sup>1</sup>	240
	600V AC	(A)	—	—	20	—	25	35	55 <sup>1</sup>	70 <sup>1</sup>	95 <sup>1</sup>	110 <sup>1</sup>	175 <sup>1</sup>	240
Operational power 50–60 Hz (3 phase)														
AC-23A	220–240V	(kW)	1.8	4	4	5.5	5.5	7.5	11	15	30	30	37	75
	380–440V	(kW)	3	7.5	7.5	11	11	15	22	30	45	55	75	132
	500V	(kW)	—	7.5	7.5	11	11	15	30	45	55	55	90	132
	660–690V	(kW)	—	7.5	7.5	11	11	15	30	37	45	45	55	55
AC-3	220–240V	(kW)	1.5	3	3	4	4	5.5	11	15	15	22	22	37
	380–440V	(kW)	2.2	5.5	5.5	7.5	7.5	11	22	30	30	37	45	55
	500V	(kW)	—	5.5	5.5	7.5	7.5	11	22	30	30	37	45	55
	660–690V	(kW)	—	5.5	5.5	7.5	7.5	11	22	30	30	37	45	55
cUL	110–120VAC	(HP)	0.5	1	1	1.5	1.5	3	5	7.5	10	10	15	25
	208V AC	(HP)	0.5	2	2	5	5	7.5	7.5	7.5	10	15	15	30
	220–240VAC	(HP)	0.5	2	2	5	5	7.5	10	15	15	15	15	30
	440–480VAC	(HP)	—	—	5	—	10	10	20	30	30	30	40	50
550–600VAC	(HP)	—	—	5	—	10	10	25	40	50	50	50	50	

\*use this version for 600V AC UL/CSA application

<sup>1</sup>with terminal extensions for cable lug connection

### Rated data

Rated data (auxiliary contacts)			P110	M220 P220	M221* P221*	P225	M225 P226*	T225	S432	S440	S606	S608	S612	S825
Operational voltage $U_e$	(V AC)		440	500	500	500	500	500	500	500	500	500	500	500
Uninterrupted current $I_u / I_{th} / I_{the}$	(A)		10	20	20	25	25	32	50	63	80	100	160	315
Operational current $I_e$														
AC-21A	(A)		10	20	20	25	25	32	50	63	80	100	160	315
	110–240V	(A)	2.5	6	6	6	6	14	16	16	16	16	16	16
AC-15	380–440V	(A)	1.5	4	4	5	5	6	7	7	7	7	7	7
	500V	(A)	0.8	2	2	2.5	2.5	3	3.5	3.5	3.5	3.5	3.5	3.5
cUL General Use	600V AC	(A)	—	—	20	—	25	35	55	70	70	110	175	240
Heavy Pilot Duty			B300	A300	A600	A300	A600	A600	A600	A600	A600	A600	A600	A600
Short-circuit rating (max. fuse)	(gL)		10	20	20	25	25	32	50	63	80	100	160	315
Conditional short-circuit current	( $kA_{eff}$ )		3	10	10	10	10	15	20	20	25	25	25	25
Terminal capacity														
flexible or multiwire (including ferrule)	min.	(mm <sup>2</sup> )	0.75	1	1	1.5	1.5	1.5	2.5	2.5	6	10	10	185 <sup>1</sup>
	max.	(mm <sup>2</sup> )	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
American Wire Gauge	(AWG)		16	12	12	10	10	10	6	4	4	1/0	2/0	350MCM

\* use this version for 600V AC UL/CSA application      <sup>1</sup> with terminal extensions for cable lug connection

### General

General			P110	M220 P220	M221* P221*	P225	M225 P226*	T225	S432	S440	S606	S608	S612	S825
Standards			IEC 60947 / EN 60947 / IEC 60204 / UL 508 / CSA 22.2, No. 14 / VDE 0660 Teil 107											
Mechanical lifespan			>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>6</sup>	>10 <sup>5</sup>	>10 <sup>5</sup>	>10 <sup>5</sup>	>10 <sup>5</sup>
Max. operating frequency/h			50	50	50	50	50	50	50	50	50	50	50	50
Climatic resistance (damp heat)	constant		to DIN IEC 60068-2-78											
	cyclic		to DIN IEC 60068-2-30											
Ambient temperature (min. / max.)	open (°C)		–25 / +50											
	enclosed (°C)		–25 / +40											
Mounting position			as required											
Mechanical shock resistance (shock duration 20 ms)	(g)		>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
Rated frequency	(Hz)		50 to 60 (other frequencies on request)											

\* use this version for 600V AC UL/CSA application

### Conformity

Sälzer Electric Rotary Cam Switches are conform to the regulations of 'Directive 2014/35/EU on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits', specified as Low Voltage Directive.

The conformity is proved by the complete compliance of the harmonized european standards EN 60947-1, EN 60947-3, EN 60947-5-1, EN 60204-1.

Sälzer Electric products are developed, manufactured and tested according to these standards. The CE marking on all our products prove the conformity to the directives.

Rotary Cam Switches from Sälzer are approved according to UL 60947.

