

Change-over and transfer switches 16...2500A

Manual operation



OT16F	OT63F	OT100F	OT160E	OT160E_W	OT315E
OT25F	OT80F	OT125F	OT200E	OT200E_W	OT400E
OT40F			OT250E	OT250E_W	

I_{th} /A	25	32	40	63	80	115	125	160	200	250	160	200	250	315	400
I_e /AC-22A, < 415V	16	25	40	63	80	100	125	160	200	250	160	200	250	315	400
I_e /AC-23A, < 415V	16	20	23	45	75	80	90	160	200	250	160	200	250	315	400
I_e /AC-21B, < 415V															

Motor operation



	OTM40F_C	OTM160E_C	OTM160E_WC	OTM315E_C
	OTM63F_C	OTM200E_C	OTM200E_WC	OTM400E_C
	OTM80F_C	OTM250E_C	OTM250E_WC	
	OTM100F_C			
	OTM125F_C			

I_{th} /A	40	63	80	115	125	160	200	250	160	200	250	315	400
I_e /AC-22A, < 415V	40	63	80	100	125	160	200	250	160	200	250	315	400
I_e /AC-23A, < 415V	40	63	80	80	90	160	200	250	160	200	250	315	400
I_e /AC-21B, < 415V													

Automatic operation



	OTM160E_C_D	OTM160E_WC_D
	OTM200E_C_D	OTM200E_WC_D
	OTM250E_C_D	OTM250E_WC_D

I_{th} /A	160	200	250	160	200	250
I_e /AC-22A, < 415V	160	200	250	160	200	250
I_e /AC-23A, < 415V	160	200	250	160	200	250

Accessories

- Optional handles
- Terminal shrouds
- Extended shafts
- Connecting accessories
- Auxiliary contacts
- Locking accessories



OT630E
OT800E

OT1000E
OT1250E

OT1600E

OT2000E
OT2500E

630 800
630 800
630 800

1000 1250
1000 1250
1000 1250

1600
1600
1250

2000 2500

2000 2500



OTM630E_C
OTM800E_C

OTM1000E_C
OTM1250E_C

OTM1600E_C

OTM2000E_C
OTM2500E_C

630 800
630 800
630 800

1000 1250
1000 1250
1000 1250

1600
1600
1600

2000 2500

2000 2500



OTM315E_C_D
OTM400E_C_D

OTM630E_C_D
OTM800E_C_D

OTM1000E_C_D
OTM1250E_C_D

OTM1600E_C_D

315 400
315 400
315 400

630 800
630 800
630 800

1000 1250
1000 1250
1000 1250

1600
1600
1250

Technical data

Manual change-over switches

OT16...125_C_

Manual change-over switches

Data according to IEC 60947-3

		Switch size	
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V
Dielectric strength		50 Hz 1 min.	kV
Rated impulse withstand voltage			kV
Rated thermal current and rated operational current AC20/DC20	/ ambient 40°C	In open air	A
	/ ambient 40°C	In enclosure	A
	/ ambient 60°C	In enclosure	A
..with minimum conductor cross section		Cu	mm ²
Rated operational current, AC-21A		up to 500 V	A
		690 V	A
Rated operational current, AC-22A		up to 500 V	A
		690 V	A
Rated operational current, AC-23A		up to 415 V	A
		440 V	A
		500 V	A
		690 V	A
		690 V	A
Rated operational current / poles in series, DC-21A		up to 48 V ¹⁾	A
		110 V	A
		220 V	A
		440 V	A
		500 V	A
Rated operational current / poles in series, DC-22A		up to 48 V ¹⁾	A
		110 V	A
		220 V	A
		440 V	A
Rated operational current / poles in series, DC-23A		up to 48 V ¹⁾	A
		110 V	A
		220 V	A
		440 V	A
		440 V	A
Rated operational power, AC-23A ²⁾		230 V	kW
The kW-ratings are accurate for 3-phase 1500 R.P.M. standard asynchronous motors		400 V	kW
		415 V	kW
		500 V	kW
		690 V	kW
Rated breaking capacity in category AC-23		up to 415 V	A
		500 V	A
		690 V	A
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max. allowed cut-off current \hat{I}_c (peak) value. The cut-off current \hat{I}_c refers to values listed by fuse manufacturers (single phase test acc. to IEC60269).	I_p (r.m.s.) 50 kA, 415 V	\hat{I}_c (peak)	kA
	Max. OFA_ fuse size	gG/aM	A/A
Rated short-time withstand current	I_p (r.m.s.) 100 kA, 500 V	\hat{I}_c (peak)	kA
	Max. OFA_ fuse size	gG/aM	A
Rated short-time making capacity ³⁾	I_{cm} (r.m.s.)	690 V 1s	kA
Power loss / pole	I_{cm} (peak)	690 V	kA
Mechanical endurance	With rated current		W
Mechanical endurance / switch	Number of oper. cycles ⁴⁾		Cycles
Cable size	Number of operations		Oper.
Terminal tightening torque	Cu-wire size suitable for terminal clamps		mm ²
Operating torque	Counter torque required		AWG
Weight without accessories	Typical for 3-pole switches		Nm
	3-pole switch		Nm
	4-pole switch		kg

Data according to UL508 (Listed)

Current			A
Horsepower, 3-phase		200 V	HP
		208 V	HP
		240 V	HP
		480 V	HP
		600 V	HP

¹⁾ Below 48 V, two poles in parallel up to OT80 are recommended particularly in polluted atmosphere

²⁾ These values are given for guidance and may vary acc. to the motor manufacturer

³⁾ Short circuit duration >50ms, without fuse protection

⁴⁾ Operating cycle: O - I - O - II - O

OT16_	OT25_	OT40_	OT63_	OT80_	OT100_	OT125_
750	750	750	750	750	750	750
6	6	6	6	6	6	6
8	8	8	8	8	8	8
25	32	40	63	80	115	125
25	32	40	63	80	115	125
20	25	32	50	63	80	100
4	6	10	16	25	35	50
16	25	40	63	80	100	125
16	25	40	63	80	100	125
16	25	40	63	80	100	125
16	20	23	45	75	80	90
16	20	23	45	65	65	78
16	20	23	45	58	60	70
10	11	12	20	20	40	50
16/1	25/1	32/1	63/1	80/1	100/1	125/1
16/2	25/2	32/2	63/2	80/2	100/2	125/2
16/3	25/3	32/3	63/4	63/4	100/4	100/4
16/4	16/4	16/4	16/4	16/4		
16/4	16/4	16/4	16/4	16/4		
16/1	25/1	32/1	63/1	80/1	100/1	125/1
16/2	25/2	32/2	63/2	80/2	100/2	125/2
16/3	25/3	32/4	45/4	45/4	63/4	80/4
10/4	10/4	10/4	10/4	10/4		
16/1	25/1	32/1	63/1	80/1	100/1	125/1
16/2	25/2	32/2	63/2	80/2	100/2	125/2
16/4	25/4	32/4	45/4	45/4	63/4	63/4
10/4	10/4	10/4	10/4	10/4		
3	4	5,5	11	22	22	22
7.5	9	11	22	37	37	45
7.5	9	11	22	37	37	45
7.5	9	11	22	37	37	45
7.5	9	11	15	18.5	37	45
128	160	184	360	640	640	720
128	160	184	360	464	480	560
80	88	96	160	160	320	400
6.5	6.5	6.5	13	13	16.5	16.5
40/32	40/32	40/32	100/80	100/80	125/125	125/125
			17	17		
			100/80	100/80		
0.5	0.5	0.5	1	1.5	2.5	2.5
0.7	0.7	0.7	1.4	2.1	3.6	3.6
0.3	0.6	1.6	2.8	4.5	4.0	6.3
10 000	10 000	10 000	10 000	10 000	10 000	10 000
20 000	20 000	20 000	20 000	20 000	20 000	20 000
0.75-10	0.75-10	0.75-10	1.5-35	1.5-35	10-70	10-70
18-8	18-8	18-8	14-4	14-4	8-00	8-00
0.8	0.8	0.8	2	2	6	6
1	1	1	1.2	1.2	2	2
0.25	0.25	0.25	0.64	0.64	0.90	0.90
0.31	0.31	0.31	0.70	0.70	1.18	1.18
16	25	40	60	80		
3	7.5	10	15	20		
3	7.5	10	15	20		
5	7.5	10	15	20		
10	15	20	30	40		
10	20	25	30	40		

Technical data

Motorized change-over switches

OTM40...125_C_

Motorized change-over switches

Data according to IEC 60947-3

		Switch size	
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V
Dielectric strength		50 Hz 1 min.	kV
Rated impulse withstand voltage			kV
Rated thermal current and rated operational current AC20/DC20	/ ambient 40°C	In open air	A
	/ ambient 40°C	In enclosure	A
	/ ambient 60°C	In enclosure	A
..with minimum conductor cross section		Cu	mm ²
Rated operational current, AC-21A		up to 500 V	A
		690 V	A
Rated operational current, AC-22A		up to 500 V	A
		690 V	A
Rated operational current, AC-23A		up to 415 V	A
		500 V	A
		690 V	A
Rated operational current / poles in series, DC-21A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational current / poles in series, DC-22A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational current / poles in series, DC-23A		up to 48 V	A
		110 V	A
		220 V	A
Rated operational power, AC-23A ¹⁾		230 V	kW
The kW-ratings are accurate for 3-phase 1500 R.P.M. standard asynchronous motors		400 V	kW
		415 V	kW
		500 V	kW
		690 V	kW
Rated breaking capacity in category AC-23		up to 415 V	A
		500 V	A
		690 V	A
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max. allowed cut-off current \hat{i}_c (peak) value. The cut-off current \hat{i}_c refers to values listed by fuse manufacturers (single phase test acc. to IEC60269).	I_p (r.m.s.) 50 kA, 415 V	\hat{i}_c (peak)	kA
	Max. OFA_fuse size	gG/aM	A/A
	I_p (r.m.s.) 18 kA, 690 V	\hat{i}_c (peak)	kA
	Max. OFA_fuse size	gG	A
	I_p (r.m.s.) 50 kA, 690 V	\hat{i}_c (peak)	kA
	Max. OFA_fuse size	gG/aM	A/A
Rated short-time withstand current	I_{cw} (r.m.s.)	690 V 1s	kA
Rated short-time making capacity ²⁾	I_{cm} (peak)	690 V	kA
Power loss / pole	With rated current		W
Mechanical endurance	Number of oper. cycles ³⁾		Cycles
Mechanical endurance / switch	Number of operations		Oper.
Cable size	Cu-wire size suitable for terminal clamps		mm ²
Terminal tightening torque	Counter torque required		Nm
Operating torque	Typical for 3-pole switches		Nm
Weight without accessories	3-pole switch		kg
	4-pole switch		kg

Data according to IEC 60947-6-1

Class of equipment			
Rated short-time withstand current	I_{cw} (r.m.s.)	690 V 0.1s	kA
Conditional short-circuit current	I_{cc} (r.m.s.)	415 V	kA
Corresponding fuse rating	gG/aM fuse	415 V	A
Rated operational current, AC-31B		up to 415 V	A
Rated operational current, AC-32B		up to 415 V	A
Rated operational current, AC-33B		up to 415 V	A

¹⁾ These values are given for guidance and may vary acc. to the motor manufacturer

²⁾ Short circuit duration > 50ms, without fuse protection

³⁾ Operating cycle: O - I - O - II - O

OTM40_	OTM63_	OTM80_	OTM100_	OTM125_
800	800	800	800	800
6	6	6	6	6
8	8	8	8	8
40	63	80	115	125
40	63	80	115	125
32	50	63	80	100
10	16	25	35	50
40	63	80	100	125
40	63	80	100	125
40	63	80	100	125
40	63	80	100	125
40	63	80	80	90
40	60	60	60	70
40	40	40	40	50
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	80/4	100/4	100/4
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	80/4	80/4	80/4
40/1	63/1	80/1	100/1	125/1
40/2	63/2	80/2	100/2	125/2
40/4	63/4	63/4	63/4	63/4
7.5	15	22	22	22
18.5	30	37	37	45
18.5	30	37	37	45
22	37	37	37	45
37	37	37	37	45
320	504	640	640	720
320	480	480	480	560
320	320	320	320	400
16.5	16.5	16.5	16.5	16.5
125/125	125/125	125/125	125/125	125/125
11	11	11	11	11
125	125	125	125	125
10	10	10	10	10
63/63	63/63	63/63	63/63	63/63
2.5	2.5	2.5	2.5	2.5
3.6	3.6	3.6	3.6	3.6
1.6	2.8	3.5	4.0	6.3
10 000	10 000	10 000	10 000	10 000
20 000	20 000	20 000	20 000	20 000
2.5-25/2x2.5-16	10-70	10-70	10-70	10-70
14-4/2x14-6	8-00	8-00	8-00	8-00
6	6	6	6	6
5	5	5	5	5
1.37	1.37	1.37	1.37	1.37
1.60	1.60	1.60	1.60	1.60
PC	PC	PC	PC	PC
5	5	5	5	5
50	50	50	50	50
125	125	125	125	125
40	63	80	100	125
40	63	80	100	125
40	63	80	80	80

Technical data

Manual, motorized and automatic transfer switches OT/OTM160...2500_C_

Manual / motorized change-over switches and automatic transfer switches

Data according to IEC 60947-3		Switch size	OT_160_	OT_200_	
Rated insulation voltage and rated operational voltage AC20/DC20 ¹⁾		Pollution degree 3 ²⁾	V	1000	1000
Dielectric strength		50 Hz 1min.	kV	10	10
Rated impulse withstand voltage ³⁾			kV	12	12
Rated thermal current and rated operational current AC20/DC20	/ ambient 40°C	In open air	A	160	200
...with minimum conductor cross section	/ ambient 40°C	In enclosure	A	160	200
Rated operational current, AC-21A		Cu	mm ²	70	95
Rated operational current, AC-22A		up to 500 V	A	160	200
		690 V	A	160	200
Rated operational current, AC-23A		up to 415 V	A	160	200
		440 V	A	160	200
		500 V	A	160	200
		690 V	A	160	200
Rated operational current / poles in series, DC-21A...23A		≤ 110 V	A	160/2	200/2
		220 V	A	160/2	200/2
		440 V	A	160/3	200/3
		660 V	A	160/4	200/4
Rated operational power, AC-23A ⁵⁾		230 V	kW	45	60
The kW-ratings are accurate for 3-phase 1500 R.P.M. standard asynchronous motors		400 V	kW	90	110
		415 V	kW	90	110
		500 V	kW	110	132
		690 V	kW	160	200
Rated breaking capacity in category AC-23		up to 415 V	A	1 280	1 600
		500 V	A	1 280	1 600
		690 V	A	1 280	1 600
Rated conditional short-circuit current I_p (r.m.s.) and cut-off current \hat{i}_c (peak) value. The cut-off current \hat{i}_c refers to values listed by fuse manufacturers (single phase test acc. to IEC60269).	I_p (r.m.s.) 80 kA, 415 V	\hat{i}_c (peak)	kA	40.5	40.5
	Max. OFA_ fuse size	gG/aM	A/A	355/315	355/315
	I_p (r.m.s.) 100 kA, 500 V	\hat{i}_c (peak)	kA	40.5	40.5
	Max. OFA_ fuse size	gG/aM	A	315/315	315/315
	I_p (r.m.s.) 80 kA, 690 V	\hat{i}_c (peak)	kA	40.5	40.5
	Max. OFA_ fuse size	gG/aM	A	355/315	355/315
Rated short-time withstand current	I_{cw} (r.m.s.)	690 V 0.15s	kA	15	15
		690 V 0.25s	kA	15	15
		690 V 1s	kA	8	8
Rated short-time making capacity ⁶⁾	I_{cm} (peak) ⁷⁾	690 V	kA	30	30
Power loss / pole	With rated current		W	2.4	4
Mechanical endurance	Number of oper. cycles ⁸⁾		Cycles	8 000	8 000
Mechanical endurance / switch	Number of operations		Oper.	16 000	16 000
Terminal bolt size	Metric thread diameter x length		mm	M8x25	M8x25
Terminal tightening torque	Counter torque required		Nm	15-22	15-22
Operating torque	Typical for 3-pole switches		Nm	7	7
Weight without accessories	Manual change-over switches	3-pole switch	kg	2.5	2.5
		4-pole switch	kg	3.2	3.2
	Motorized and automatic transfer switches	3-pole switch	kg	5.7	5.7
		4-pole switch	kg	6.4	6.4

Data according to IEC 60947-6-1

Class of equipment				PC	PC
Rated short-time withstand current	I_{cw} (r.m.s.)	690 V 0.1s	kA	15	15
Rated operational current, AC-31B		up to 415 V	A	160	200
Rated operational current, AC-33B		up to 415 V	A	160	200

¹⁾ Automatic transfer switches: operational voltage = max. 415 V AC for OTM_C2D_, OTM_C3D_ and OTM_C8D_

²⁾ Automatic transfer switches: pollution degree 2 for OTM_C2D_, OTM_C3D_ and OTM_C8D_

³⁾ Automatic transfer switches: U_{imp} = 6 kV for OTM_C2D_, OTM_C3D_ and OTM_C8D_

⁴⁾ Utilization category B

⁵⁾ These values are given for guidance and may vary acc. to the motor manufacturer

⁶⁾ Short circuit duration > 50ms, without fuse protection

⁷⁾ Max. distance from switch frame to nearest busbar / cable support 150 mm

⁸⁾ Operating cycle: O - I - O - II - O

⁹⁾ Category AC-21B, up to 415V

¹⁰⁾ For manual change-over switches

¹¹⁾ For motorized and automatic transfer switches

OT_250_	OT_315_	OT_400_	OT_630_	OT_800_	OT_1000_	OT_1250_	OT_1600_	OT_2000_	OT_2500_
1000	1000	1000	1000	1000	1 000	1 000	1 000	1 000	1 000
10	10	10	10	10	10	10	10	10	10
12	12	12	12	12	12	12	12	12	12
250	315	400	630	800	1 000	1 250	1 600	2000	2500
250	315	400	630	800					
120	185	240	2x185	2x240	2x300	2x400	2x500	3x500	4x500
250	315	400	630	800	1 000	1 250	1 600	2000 ⁹⁾	2500 ⁹⁾
250	315	400	630	800	1 000	1 250	1 600		
250	315	400	630	800	1 000	1 250	1 600		
250	315	400	630	800	1 000	1 250	1 600		
250	315	400	630	800	1 000	1 250	1 250		
250	315	400	630	800	1 000	1 250	1 250		
250	315	400	630	800	1 000	1 250	1 250		
250	315	400	630	800	1 000	1 250	1 250		
250/2	315/1 ⁴⁾	400/1 ⁴⁾	630/1	800/1					
250/2	315/2 ⁴⁾	400/2 ⁴⁾	630/1	800/1					
230/3	315/3	360/3	630/2	720/2					
200/4	315/4	315/4	630/4 ⁴⁾	630/4 ⁴⁾					
75	100	132	200	250	315	400	400		
140	160	220	355	450	560	710	710		
145	180	230	355	450	560	710	710		
170	220	280	400	560	710	900	900		
250	315	400	630	800	1 000	1 200	1 200		
2 000	2 520	3 200	5 040	6 400	10 000	10 000	10 000		
2 000	2 520	3 200	5 040	6 400	10 000	10 000	10 000		
2 000	2 520	3 200	5 040	6 400	10 000	10 000	10 000		
40.5	59	59	83.5	83.5	100	100	100		
355/315	500/500	500/500	800/1 000	800/1 000	1 250/1 250	1 250/1 250	1 250/1 250		
40.5	61.5	61.5	90	90	106	106	106		
315/315	500/450	500/450	800/800	800/800	1 250/1 250	1 250/1 250	1 250/1 250		
40.5	59	59	83.5	83.5					
355/315	500/500	500/500	800/1 000	800/1 000					
15	31	31	38	38	50	50	50	50	50
15	24	24	36	36	50	50	50	50	50
8	15	15	20	20	50	50	50	55	55
30	65	65	80	80	92	92	92	110	110
6.5	6.5	10	25	40	19	29	48	55	85
8 000	8 000	8 000	5 000	5 000	3 000	3 000	3 000	2000	2000
16 000	16 000	16 000	10 000	10 000	6 000	6 000	6 000	4000	4000
M8x25	M10x30	M10x30	M12x40	M12x40	M12x60	M12x60	M12x60	M12x60	M12x60
15-22	30-44	30-44	50-75	50-75	50-75	50-75	50-75	50-75	50-75
7	16	16	27	27	78	78	78	78	78
2.5	4.7	4.7	12.8	12.8	32.3	32.3	34.8	48	48
3.2	5.8	5.8	15.6	15.6	40.2	40.2	43.3	60	60
5.7	10.2	10.2	17.5	17.5	42	42	44	56	56
6.4	11.4	11.4	20.4	20.4	50	50	52	70	70
PC	PC	PC	PC	PC	PC	PC	PC	PC	PC
15	25	25	38	38	50	50	50	50	50
250	315	400	630 ¹⁰⁾ /650 ¹¹⁾	800 ¹⁰⁾ /720 ¹¹⁾	1 000	1 250	1 600	2000 ¹⁰⁾	2000 ¹⁰⁾
250	315	400	630 ¹⁰⁾ /650 ¹¹⁾	800 ¹⁰⁾ /650 ¹¹⁾	1 000	1 000	1 000		

Technical data, motor operators

Motorized change-over switches

OTM40...125_C_

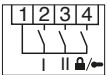
Motor operator

Data according to IEC 60947		Switch size	40...125
Rated operational voltage U_e	Pollution degree 3 50/60 Hz	V AC/DC	110 - 240
Operating voltage range			$0.85 - 1.1 \times U_e$
Operating time ¹⁾	90° I-0, 0-I, 0-II, II-0	s	0.5-1.0
Operating transfer time ¹⁾	180° I-II, II-I	s	1.2-1.5
OFF -time when operating I-II or II-I ¹⁾	180° I-II, II-I	s	0.4-0.8
Nominal current I_n ¹⁾		A	0.2-0.5
Current inrush ¹⁾		A	1.5-3.0
Operating rate	Cycle 0-I-0-II-0 Max. continuous Max. short-time ≤ 10 cycles	cycles/min cycles/min	1 10
Overvoltage category			III
Rated impulse withstand voltage U_{imp}		kV	4
Dielectric strength	50 Hz 1 min.	kV	1.5
Impulse command	Min. impulse duration	ms	100

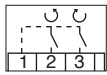
Terminals

Voltage supply wiring for U_e			PE - N - L
Cross section	Solid/stranded	mm ²	1.5 - 2.5
Short-circuit protection device	Max. MCB	A	C16
Control terminal			C - II - I - O
Cross section	Solid/stranded	mm ²	1.5 - 2.5
Maximum cable length		m	100

Terminal for state information

Terminal for state information		Solid/stranded	mm ²	1.5
Also used with the OMD automatic control unit		Rating	A	3 AC-1/250V
Common, voltage supply	1			
Position of switch I	2			
Position of switch II	3			
Handle attached or motor operator locked	4			
Short-circuit protection device		Max. MCB	A	C2

Control terminal for OMD automatic control unit

Control terminal for OMD automatic control unit		Solid/stranded	mm ²	1.5 - 2.5
Common, voltage supply from motor operator		1	V DC	24
Close switch I or open switch II	2	V DC	24	
		mW	500	
Close switch II or open switch I	3	V DC	24	
		mW	500	
Operating temperature		°C	-25...+55	
Transportation and storage temperature		°C	-40...+70	
Max. altitude		m	2000	
Protection degree (front panel)			IP20	

¹⁾ Under nominal conditions

Technical data, motor operators

Motorized change-over switches

OTM160...2500_C_

Motor operator

Data according to IEC 60947		Switch size	160...250	315...400	630...800	1000...1600	2000...2500		
Rated operational voltage U_e	Pollution degree 3 50/60 Hz	V AC			220 - 240				
		V AC/DC			110 - 125				
		V DC			48				
		V DC			24				
Operating voltage range			0,85 - 1,1 x U_e						
Operating time ¹⁾	90° I-0, 0-I, 0-II, II-0	220-240VAC	s	0.4-1.0	0.4-1.0	0.4-1.0	0.5-1.5	0.5-1.5	
		110-125VAC/DC	s	0.5-1.5	0.5-1.5	0.6-1.2	0.5-1.5	0.5-1.5	
		48VDC	s	0.5-1.5	0.4-1.0	0.6-1.6	0.5-1.5	0.5-1.5	
		24VDC	s	0.4-1.0	0.4-1.0	0.5-1.5	1.0-2.0	1.0-2.0	
Operating transfer time ¹⁾	180° I-0-II, II-0-I	220-240VAC	s	1.0-2.0	0.9-2.0	0.9-2.0	1.5-3.0	1.5-3.0	
		110-125VAC/DC	s	1.1-2.5	1.2-2.6	1.2-3.0	1.5-3.0	1.5-3.0	
		48VDC	s	1.4-2.5	1.0-2.0	1.3-3.0	1.5-3.0	1.5-3.0	
		24VDC	s	1.0-2.0	1.0-2.0	1.1-2.5	2.0-3.5	2.0-3.5	
OFF -time when operating I-II or II-I ¹⁾	180° I-II, II-I	220-240VAC	s	0.4-1.0	0.4-1.0	0.4-1.0	0.5-1.5	0.5-1.5	
		110-125VAC/DC	s	0.4-1.1	0.5-1.5	0.6-1.5	0.5-1.5	0.5-1.5	
		48VDC	s	0.5-1.1	0.4-1.0	0.7-1.6	0.5-1.5	0.5-1.5	
		24VDC	s	0.4-1.0	0.4-1.0	0.5-1.5	0.8-1.7	0.8-1.7	
Nominal current I_n ¹⁾		220-240VAC	A	0.2	0.5	0.7	1.8	1.8	
		110-125VAC/DC	A	0.5	0.6	0.8	3.0	3.0	
		48VDC	A	1.1	2.1	2.6	5.3	5.3	
		24VDC	A	3.3	4.2	4	8.0	8.0	
Current inrush ¹⁾		220-240VAC	A	1.3	2.1	2.8	7.7	7.7	
		110-125VAC/DC	A	2.1	2.5	4.6	13.3	13.3	
		48VDC	A	4.4	8.3	8.4	22.4	22.4	
		24VDC	A	16.8	17.5	22.4	26.6	26.6	
Overload fuse	Type / I_n / Capacity	220-240VAC	mA	T/315/H	T/500/H	T/1000/H	T/2000/H	T/2000/H	
		110-125VAC/DC	mA	T/500/H	T/630/H	T/1000/H	T/4000/H	T/4000/H	
		48VDC	A	T/1,25/H	T/2,5/H	T/2,5/H	T/5/H	T/5/H	
		24VDC	A	T/4,0/H	T/5,0/H	T/5,0/H	T/10/H	T/10/H	
	Size		mm	5x20	5x20	5x20	5x20	5x20	
Operating rate	Cycle 0-I-0-II-0 Max. continuous	220-240VAC	cycles/min	1	1	1	0.5	0.5	
		110-125VAC/DC	cycles/min	1	1	1	0.5	0.5	
		48VDC	cycles/min	1	1	1	0.5	0.5	
		24VDC	cycles/min	1	1	1	0.5	0.5	
		Max. short-time ≤ 10 cycles	220-240VAC	cycles/min	10	10	10	5	5
			110-125VAC/DC	cycles/min	10	10	10	5	5
			48VDC	cycles/min	10	10	10	5	5
			24VDC	cycles/min	10	10	10	5	5
Overvoltage category					III				
Rated impulse withstand voltage U_{imp}		kV			4				
Dielectric strength	50 Hz 1 min.	kV			1.5				
Impulse command	Min. impulse duration	ms			100				
Terminals									
Voltage supply wiring for U_e						PE - N - L			
Cross section	solid/stranded	mm ²			1.5 - 2.5				
Short-circuit protection device	max. MCB	A			C16				
Control terminal (no SELV)						C - II - I - O			
Cross section	solid/stranded	mm ²			1.5 - 2.5				
Maximum cable length		m			100				
State information of locking (no SELV)									
Handle attached or motor operator locked	11-12-14 (C/O)				5A/250V/cosφ=1				
Locking motor operator	23-24 (NO)				5A/250V/cosφ=1				
Short-circuit protection device	Max. MCB	A			C2				
Protection degree					IP20				
Operating temperature		°C			-25...+55				
Transportation and storage temperature		°C			-40...+70				
Max. altitude		m			2000				

¹⁾ Under nominal conditions

Technical data, power circuit

Automatic transfer switches

Technical data for automatic transfer switches, power circuit

OTM_C2D_ (OMD200)

Rated operational voltage U_e	208 - 415 V AC +/- 20 % + N
Phase - Neutral	120 - 240 V AC +/- 20 %
Rated frequency	50 / 60 Hz +/- 10 %
Rated impulse withstand voltage U_{imp}	6 kV

OTM_C3D_ (OMD300)

Rated operational voltage U_e	208 - 415 V AC +/- 20 % + N
Phase - Neutral	120 - 240 V AC +/- 20 %
Rated frequency	50 / 60 Hz +/- 10 %
Rated impulse withstand voltage U_{imp}	6 kV

OTM_C8D_ (OMD800)

Rated operational voltage U_e on 3 phase system	100 - 415 V AC +/- 20 %
Phase - Neutral	57,7 - 240 V AC +/- 20 %
Rated operational voltage U_e on 1 phase system ¹⁾	57,7 - 240 V AC +/- 20 %
Rated frequency	50 / 60 Hz +/- 10 %
Rated impulse withstand voltage U_{imp}	6 kV
AUX voltage ¹⁾	24 V DC - 110 V DC (-10 to 15 %)
Operating temperature	-5...+40°C
Transportation and storage temperature	-25...+70°C
Altitude	Max.2000m

¹⁾ If on 1 phase system the voltage level is between 57,7 – 109 V AC, AUX voltage supply must be used

Technical data, motor operator Automatic transfer switches

Technical data for motor operator, control circuit

Motor operator, control circuit		OTM160...250	OTM315...400	OTM630...800	OTM1000...1600	
Rated operational voltage U [V]	Pollution degree 3	50/60 Hz	220 - 240 V AC			
Operating voltage range	0,8...1,2 x U _n					
Operating times	See the table below					
Nominal current I _n ^{a)}		A	0.2	0.5	0.7	1.8
Current I _{rush} ^{a)}		A	1.3	2.1	2.8	7.7
Overload fuse	Type / In / Capacity	mA	T/315/H	T/500/H	T/1000/H	T/2000/H
	Size	mm	5x20	5x20	5x20	5x20
Operating rate	Cycle 0 - I - 0 - II - 0					
	Max. continuous	cycles / min	1	1	1	0.5
Max. short-time ≤ 10 cycles		cycles / min	10	10	10	5
Overvoltage category				III		
Rated impulse withstand voltage U _{imp}		kV		4		
Dielectric strength	50 Hz 1 min.	kV		1.5		
Terminals						
Voltage supply wiring for U				PE - N - L		
Cross section	solid/stranded	mm ²	1.5 - 2.5			
Short-circuit protection device	max. MCB	A	C16			
State information of locking (no SELV)						
Cross section	solid/stranded	mm ²	1.5 - 2.5			
Locking motor operator	23-24 (NO)		5A/250V/cosφ=1			
Short-circuit protection device	Max. MCB	A	C2			
Protection degree			IP20			
Operating temperature		°C	-25...+55			
Transportation and storage temperature		°C	-40...+70			
Max. altitude		m	2000			

Operating times

Type	Operating transfer time ^{a)}		OFF-time when operating ^{a)}	
	I - II, II - I [s]		I - II, II - I [s]	
OTM160...250_C2D_	2.0 - 4.0		0.4 - 1.0	
OTM160...250_C3D_	2.0 - 4.0		0.4 - 1.0	
OTM160...250_C8D_	1.5 - 3.0		0.4 - 1.0	
OTM315...400_C2D_	2.0 - 5.0		0.4 - 1.0	
OTM315...400_C3D_	2.0 - 5.0		0.4 - 1.0	
OTM315...400_C8D_	1.5 - 3.0		0.4 - 1.0	
OTM630...800_C2D_	2.0 - 5.0		0.4 - 1.0	
OTM630...800_C3D_	2.0 - 5.0		0.4 - 1.0	
OTM630...800_C8D_	1.5 - 3.0		0.4 - 1.0	
OTM1000...1600_C2D_	3.0 - 6.0		0.6 - 1.5	
OTM1000...1600_C3D_	3.0 - 6.0		0.6 - 1.5	
OTM1000...1600_C8D_	2.5 - 4.0		0.6 - 1.5	

^{a)} Under nominal conditions

Technical data

Automatic control units and dual power source

Technical data for automatic control units OMD200/300/800

OMD200 and OMD300

Rated operational voltage U_e	208 V AC - 480 V AC +/- 20% + N
Phase - Neutral	120 V AC - 277 V AC +/- 20%
Rated frequency	50 / 60 Hz +/- 10%
Voltage sensing precision	5%
Frequency sensing precision	1%
Relay ratings:	
X21, X22	12 A, AC1, 250 V / 12 A, DC1, 24 V
X23, X24	8 A, AC1, 250 V / 8 A, DC1, 24 V
X26, X27, X28	10 A, AC1, 250 V / 5 A, DC1, 24 V
Rated impulse withstand voltage, U_{imp}	6 kV
Overvoltage category	III
Pollution degree	2

OMD800

Rated operational voltage U_e on 3 phase system	100 V AC - 480 V AC +/- 20%
Phase - Neutral	57,7 V AC - 277 V AC +/- 20%
Rated operational voltage U_e on 1 phase system ¹⁾	57,7 V AC - 277 V AC +/- 20%
Rated frequency	50 / 60 Hz +/- 10%
Voltage sensing precision	1%
Frequency sensing precision	1%
Relay ratings:	
X21, X22, X24	12 A, AC1, 250 V / 12 A, DC1, 24 V
X23	8 A, AC1, 250 V / 8 A, DC1, 24 V
X29	5 A, AC1, 250 V / 6 A, DC1, 24 V
Rated impulse withstand voltage, U_{imp}	6 kV
Overvoltage category	III
Pollution degree	2
AUX voltage ¹⁾	24 V DC - 110 V DC (-10% to +15%)
Protection rating for the front panel	IP40
Operating temperature	- 20...+ 60 °C
Transportation and storage temperature	- 25...+ 80 °C
Altitude	Max. 2000m
Humidity	
With condensation	5 %...98 %
Without condensation	5 %...90 %

¹⁾ If on 1 phase system the voltage level is between 57,7 – 109 V AC, AUX voltage supply must be used

Technical data for dual power source ODPSE230C

Dual power source ODPSE230C

Rated operational voltage U [V]	220...240 V AC +/- 20%
Rated frequency	50 / 60 Hz +/- 10%
Short-circuit protection device	Max. MCB 4 A
Nominal output current I_n [A]	4 A
Startup time	Max. 1.0 s (with 230 V AC)
Operating transfer time LN1 - LN2 or LN2 - LN1	Max. 0.5 s (with 230 V AC)
Cable size	0,2...2,5 mm ²
Rated impulse withstand voltage, U_{imp}	4 kV
Overvoltage category	III
Pollution degree	3
Protection rating for the front panel	IP20
Operating temperature	- 25...+ 60 °C
Transportation and storage temperature	- 40...+ 70 °C
Altitude	Max. 2000m

Technical data

UL/CSA manual change-over switches

OT200...800U_C_ and auxiliary contacts

Manual change-over switches

Data according to UL and CSA			Switch size	OT200U_	OT400U_	OT600U_	OT800U_	
Standards				UL98	UL98	UL98	UL98	
				CSA 22.2#4	CSA 22.2#4	CSA 22.2#4	CSA 22.2#4	
General use ratings - 1- or 3-phase ratings			V	600	600	600	600	
			A	200	400	600	800	
Horsepower, 3-phase ratings			240V HP	75	125	200	250	
			480V HP	150	250	450	500	
			600V HP	200	350	500	500	
Short-circuit ratings			Required protection					
			Circuit breaker	kA	14	25	35	42
			Class J/L fuse	kA	65/100	100	100	100
			...fuse size	A	400/200	600	800	800
			Class RK5 fuse	kA			100	
			...fuse size	A			600	

Data according to IEC 60947-3

Rated insulation voltage and rated operational voltage AC20/DC20			Pollution degree 3	V	1000	1000	1000	1000	
Dielectric strength			50 Hz 1min.	kV	10	10	10	10	
Rated impulse withstand voltage				kV	12	12	12	12	
Rated thermal current and rated operational current AC20/DC20			/ ambient 40°C	In open air	A	250	400	800	1600
...with minimum conductor cross section				Cu mm ²	120	240	2x240	2x500	
Rated operational current, AC-21A				up to 690 V	A	250	400	800	1600
Rated operational current, AC-22A				up to 500 V	A	250	400	800	1600
				690 V	A	250	400	800	1600
Rated operational current, AC-23A				up to 500 V	A	250	400	800	1250
				690 V	A	250	400	800	1250
Rated conditional short-circuit current I _p (r.m.s.) and corresponding max. allowed cut-off current \hat{I}_c peak value ¹⁾			I _p (r.m.s.) : 100 kA, 500 V Max. OFA_ fuse size	\hat{I}_c (peak) gG/aM	kA A	40.5 315/315	61.5 500/450	90 800/800	106 1250/1250
			I _p (r.m.s.) : 80 kA, 690 V Max. OFA_ fuse size	\hat{I}_c (peak) gG/aM	kA A	40.5 355/315	59 500/500	83,5 800/1000	
Rated short-time withstand current			I _{sw} (r.m.s.)	690V, 1s	kA	8	15	20	50
Rated short-circuit making capacity			I _{cm} (peak)	690V	kA	30	65	80	92
Mechanical endurance			Number of operating cycles ²⁾		Cycles	8000	8000	5000	3000
Mechanical endurance / switch			Number of operations		Oper.	16000	16000	10000	6000
Terminal bolt size			Metric thread diameter x length		mm	M8x25	M10x30	M12x40	M12x60
Terminal tightening torque			Counter torque required		Nm	15...22	30...44	50...75	50...75
Operating torque			3-pole switches		Nm	7	16	27	78
Weight without accessories			3-pole switch		kg	2.8	5.0	13.1	34.8
			4-pole switch		kg	3.5	6.1	15.9	43.3

Data according to IEC 60947-6-1

Class of equipment				PC	PC	PC	PC		
Rated short-time withstand current			I _{sw} (r.m.s.)	690 V 0.1s		15	25	38	50
Rated operational current, AC-31B				up to 415 V	A	250	400	800	1600
Rated operational current, AC-33B				up to 415 V	A	250	400	800	1000

¹⁾ The fuse in single-phase test according to IEC 60269

²⁾ Operating cycle: O - I - O - II - O

Auxiliary contacts

Technical data for auxiliary contacts according to IEC 60947-5-1

For OA1G_, OA2G_, OA3G_, OA7G_, OA8G_

U _e /[V]	AC15		DC12			DC13	
	I _e /[A]	U _e /[V]	I _e /[A]	P/[W]	I _e /[A]	P/[W]	
230	6	24	10	240	2	50	
400	4	72	4	290	0.8	60	
415	4	125	2	250	0.55	70	
690	2	250	0.55	140	0.27	70	
		440	0.1	44			