



DC-Switch
with knife contacts

G20S/G20

G20S/G20

DC-Switch with knife contacts

CONTENT

< For direct link click on the page number >

The most important technical data	3
Electrical data of G20S/G20 ON/OFF-Switches	4
Electrical data of G20S/G20 Change-Over Switches	5
Pre-configured Main Switches G20	6
Dimensions Pre-configured Main Switches G20	9
Dimensions G20S/G20	10

G20S/G20

DC-Switch with knife contacts



Ideal solution for DC applications

With the G20S respectively G20 Kraus & Naimer has developed a newly designed DC switch. The compact and rugged disconnecter offers numerous application possibilities including photovoltaic inverters.

The uniquely designed knife contacts result in a switching capacity of 20 Amps at 690V DC (DC-22A) and a high short circuit withstand capability. Finger-proof terminals according to EN 50274 and protection degree IP20 offer maximum safety. In combination with a standard latching mechanism, the G20 complies with all regulations required for main switches according to IEC/EN 60204. In addition the G20 is also ideal for AC-applications with high short circuit fault levels, as well as electronic circuitry with low current and voltages.

Of course the new G-line can also be combined with many optional extras from the Kraus & Naimer product line.

The most important technical data, according to IEC/EN 60947-3

Rated Insulation Voltage	U_i	690 V AC
Rated Insulation Voltage	U_i	500 V DC
Rated Insulation Voltage	U_i	1000 V AC*
Rated Thermal Current	I_u/I_h	20 A

* DC possible with series connection

Maximum permissible wire gage	mm ²	AWG
Single-core or stranded wire	2x2,5	12
Flexible wire	2x2,5	12
Flexible wire with sleeving in according with DIN 46228	2x2,5	-

Ambient Temperature

between -5 °C and +40 °C

General Use	G20S
150 V DC	20 A
300 V AC Pilot Duty	10 A B 300



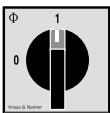
ELECTRICAL DATA OF ON/OFF-SWITCHES

Rated Utilization Category	Contacts in series Permissible Voltage						Rated Operational Current I _n / A	
	1	2	3	4	5	6	G20S	G20
DC-21 A	250	500	750	1000	–	–	20	8
	440	880	–	–	–	–	13	4
DC-22 A	250	500	750	1000	–	–	20	2
	330	660	990	–	–	–	10	1
	440	880	–	–	–	–	5	0,5
DC-23 A	24	48	72	96	120	144	20	20
	48	96	144	192	240	288	20	12
	60	120	180	240	300	360	15	5
	110	220	330	440	550	660	12	3
	160	320	480	640	800	960	8	2
	250	500	750	1000	–	–	5	1
	330	660	990	–	–	–	3	0,5
	440	880	–	–	–	–	1	0,25
cULus*	150	300	–	600	–	–	20	–

< to the dimensions >

G20S/G20 ON/OFF-Switches 0-1

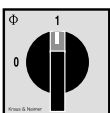
SWITCHES



IEC DC-General Use UL*	250 V 150 V	Stages	500 V 300 V	Stages	750 V –	Stages	750 V –	Stages	1000 V 600 V	Stages
Pole	1 contact	Stages	2 contacts in series	Stages	2+1 contacts ¹	Stages	3 contacts in series	Stages	4 contacts in series	Stages
1 pole	D101	1	D201	2	D351	3	D301	3	D401	4
2 pole	D102	2	D202	4	D352	6	D302	6	D402	8
3 pole	D103	3	D203	6	D353	9	D303	9	D403	12
4 pole	D104	4	D204	8	D354	12	D304	12	–	–
5 pole	D105	5	D205	10	–	–	–	–	–	–
6 pole	D106	6	D206	12	–	–	–	–	–	–

G20S/G20 ON/OFF-Switches 0-1

SWITCH DISCONNECTORS



Pole	250 V 1 contact	Stages	500 V 2 contacts in series	Stages	750 V 2+1 contacts ¹	Stages	750 V 3 contacts in series	Stages	1000 V 4 contacts in series	Stages
1 pole	TD3101	1	TD3201	2	TD3351	3	TD3301	3	TD3401	4
2 pole	TD3102	2	TD3202	4	TD3352	6	TD3302	6	TD3402	8
3 pole	TD3103	3	TD3203	6	TD3353	9	TD3303	9	TD3403	12
4 pole	TD3104	4	TD3204	8	TD3354	12	TD3304	12	–	–
5 pole	TD3105	5	TD3205	10	–	–	–	–	–	–
6 pole	TD3106	6	TD3206	12	–	–	–	–	–	–

* Ratings applicable for Disconnectors in Photovoltaic

¹ 3 contacts in the circuit: 2 contacts in series in the +line, 1 contact in the -line

> Back to the table of contents >

Customized contact developments are up on request. Please be so kind and advise the nominal current, voltage and utilization category as well as required terminal lugs.



ELECTRICAL DATA OF CHANGE OVER SWITCHES

Rated Utilization Category	Contacts in series Permissible Voltage						Rated Operational Current ¹ /A	
	1	2	3	4	5	6	G20S	G20
DC-21 A	250	500	750	1000	-	-	7	*
	440	880	-	-	-	-	1	*
DC-22 A	250	500	750	1000	-	-	3	*
	330	660	990	-	-	-	1	*
DC-23 A	24	48	72	96	120	144	20	*
	48	96	144	192	240	288	20	*
	60	120	180	240	300	360	15	*
	110	220	330	440	550	660	6	*
	160	320	480	640	800	960	3	*
	250	500	750	1000	-	-	1	*

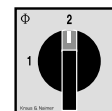
* Electrical data on request

< to the dimensions >

G20S/G20 Change-Over Switches 1-2

SWITCHES

Pole	250 V		500 V		750 V		750 V		1000 V	
	1 contact	Stages	2 contacts in series	Stages	2+1 contacts ¹	Stages	3 contacts in series	Stages	4 contacts in series	Stages
1 pole	D111	1	D211	2	-	-	-	-	-	-
2 pole	D112	2	D212	4	-	-	-	-	-	-
3 pole	D113	3	D213	6	-	-	-	-	-	-
4 pole	D114	4	-	-	-	-	-	-	-	-

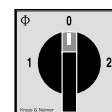


For the use as supply change over reduced values apply upon request.

G20S/G20 Change-Over Switches with 0 position 1-0-2

SWITCHES

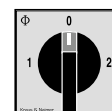
Pole	250 V		500 V		750 V		750 V		1000 V	
	1 contact	Stages	2 contacts in series	Stages	2+1 contacts ¹	Stages	3 contacts in series	Stages	4 contacts in series	Stages
1 pole	D121	2	D221	4	-	-	D321	6	D421	8
2 pole	D122	4	D222	8	-	-	D322	12	-	-
3 pole	D123	6	D223	12	-	-	-	-	-	-
4 pole	D124	8	-	-	-	-	-	-	-	-



G20S/G20 Change-Over Switches with 0 position 1-0-2

SWITCH DISCONNECTORS

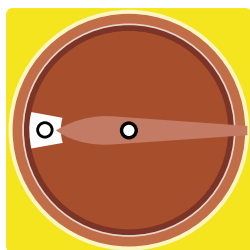
Pole	250 V		500 V		750 V		750 V		1000 V	
	1 contact	Stages	2 contacts in series	Stages	2+1 contacts ¹	Stages	3 contacts in series	Stages	4 contacts in series	Stages
1 pole	TD9121	2	TD9221	4	-	-	TD9321	6	TD9421	8
2 pole	TD9122	4	TD9222	8	-	-	TD9322	12	-	-
3 pole	TD9123	6	TD9223	12	-	-	-	-	-	-
4 pole	TD9124	8	-	-	-	-	-	-	-	-



¹ 3 contacts in the circuit: 2 contacts in series in the +line, 1 contact in the -line

Customized contact developments are up on request. Please be so kind and advise the nominal current, voltage and utilization category as well as required terminal lugs.

PRE-CONFIGURED MAIN SWITCHES G20



48 x 48 mm

Rated Utilization Category	Contacts in series Permissible Voltage				Rated Operational Current I _n /A G20
	1	2	3	4	
DC-23 A	24	48	72	96	20
	48	96	144	192	12
	60	120	180	240	5
	110	220	330	440	3
	160	320	480	640	2
	250	500	750	1000	1

< to the dimensions >

1
max. 250 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1101/01 E	G20 TD2101/01 E	1
2	G20 TD1102/01 E	G20 TD2102/01 E	2
3	G20 TD1103/01 E	G20 TD2103/01 E	3
4	G20 TD1104/01 E	G20 TD2104/01 E	4
5	G20 TD1105/01 E	G20 TD2105/01 E	5
6	G20 TD1106/01 E	G20 TD2106/01 E	6

2
max. 500 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1201/01 E	G20 TD2201/01 E	2
2	G20 TD1202/01 E	G20 TD2202/01 E	4
3	G20 TD1203/01 E	G20 TD2203/01 E	6
4	G20 TD1204/01 E	G20 TD2204/01 E	8
5	G20 TD1205/01 E	G20 TD2205/01 E	10
6	G20 TD1206/01 E	G20 TD2206/01 E	12

3
max. 750 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1301/01 E	G20 TD2301/01 E	3
2	G20 TD1302/01 E	G20 TD2302/01 E	6
3	G20 TD1303/01 E	G20 TD2303/01 E	9
4	G20 TD1304/01 E	G20 TD2304/01 E	12
1	G20 TD1351/01 E	G20 TD2351/01 E	3
2	G20 TD1352/01 E	G20 TD2352/01 E	6
3	G20 TD1353/01 E	G20 TD2353/01 E	9
4	G20 TD1354/01 E	G20 TD2354/01 E	12

4
max. 1000 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1401/01 E	G20 TD2401/01 E	4
2	G20 TD1402/01 E	G20 TD2402/01 E	8
3	G20 TD1403/01 E	G20 TD2403/01 E	12

< Back to the table of contents >



PRE-CONFIGURED MAIN SWITCHES G20

Rated Utilization Category	Contacts in series Permissible Voltage				Rated Operational Current I_n /A G20
	1	2	3	4	
DC-23 A	24	48	72	96	20
	48	96	144	192	12
	60	120	180	240	5
	110	220	330	440	3
	160	320	480	640	2
	250	500	750	1000	1

< to the dimensions >

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1101/04 FT2	G20 TD2101/04 FT2	1
2	G20 TD1102/04 FT2	G20 TD2102/04 FT2	2
3	G20 TD1103/04 FT2	G20 TD2103/04 FT2	3
4	G20 TD1104/04 FT2	G20 TD2104/04 FT2	4
5	G20 TD1105/04 FT2	G20 TD2105/04 FT2	5
6	G20 TD1106/04 FT2	G20 TD2106/04 FT2	6

1
max. 250 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1201/04 FT2	G20 TD2201/04 FT2	2
2	G20 TD1202/04 FT2	G20 TD2202/04 FT2	4
3	G20 TD1203/04 FT2	G20 TD2203/04 FT2	6
4	G20 TD1204/04 FT2	G20 TD2204/04 FT2	8
5	G20 TD1205/04 FT2	G20 TD2205/04 FT2	10
6	G20 TD1206/04 FT2	G20 TD2206/04 FT2	12

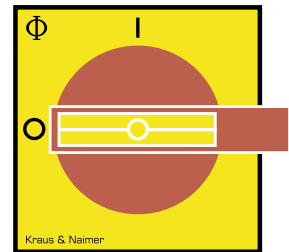
2
max. 500 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1301/04 FT2	G20 TD2301/04 FT2	3
2	G20 TD1302/04 FT2	G20 TD2302/04 FT2	6
3	G20 TD1303/04 FT2	G20 TD2303/04 FT2	9
4	G20 TD1304/04 FT2	G20 TD2304/04 FT2	12
1	G20 TD1351/04 FT2	G20 TD2351/04 FT2	3
2	G20 TD1352/04 FT2	G20 TD2352/04 FT2	6
3	G20 TD1353/04 FT2	G20 TD2353/04 FT2	9
4	G20 TD1354/04 FT2	G20 TD2354/04 FT2	12

3
max. 750 V

Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1401/04 FT2	G20 TD2401/04 FT2	4
2	G20 TD1402/04 FT2	G20 TD2402/04 FT2	8
3	G20 TD1403/04 FT2	G20 TD2403/04 FT2	12

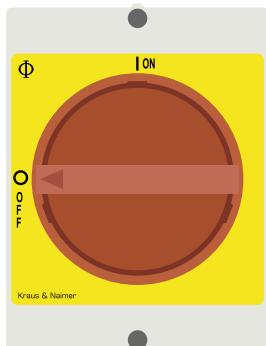
4
max. 1000 V



48 x 48 mm

< Back to the table of contents >

PRE-CONFIGURED MAIN SWITCHES G20



A: Height: 81 mm
B: Height: 90 mm

Rated Utilization Category	Contacts in series Permissible Voltage		Rated Operational Current I _n /A G20
	1	2	
DC-23 A	24	48	20
	48	96	12
	60	120	5
	110	220	3
	160	320	2
	250	500	1

< to the dimensions >

1
max. 250 V

Pole	Main Switches	Main Switches with Emergency Function	Height
1	G20 TD1101/33 KS51V	G20 TD2101/33 KS51V	A
2	G20 TD1102/33 KS51V	G20 TD2102/33 KS51V	B
3	G20 TD1103/33 KS51V	G20 TD2103/33 KS51V	B

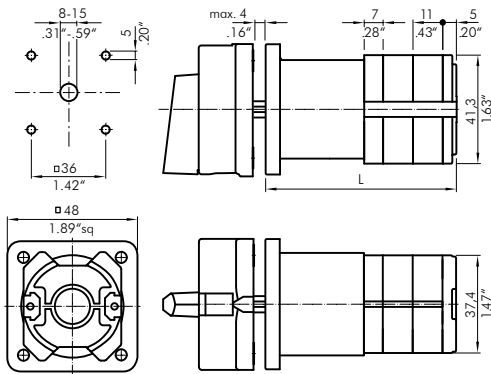
2
max. 500 V

Pole	Main Switches	Main Switches with Emergency Function	Height
1	G20 TD1101/33 KS51V	G20 TD2101/33 KS51V	B

DIMENSIONS PRE-CONFIGURED MAIN SWITCHES G20

Four Hole Panel Mounting – lockable handle disk

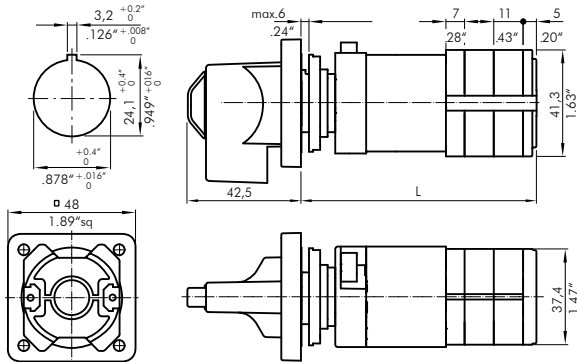
G20 E



L		1	2	3	4	5	6	7	8	9	10	11	12
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		42	53	78,8	89,8	100,8	111,8	122,8	133,8	144,8	155,8	166,8	177,8
inch		1.65	2.09	3.11	3.54	3.97	4.40	4.83	5.27	5.70	6.13	6.57	7

Single Hole Mounting – handle with lock bar

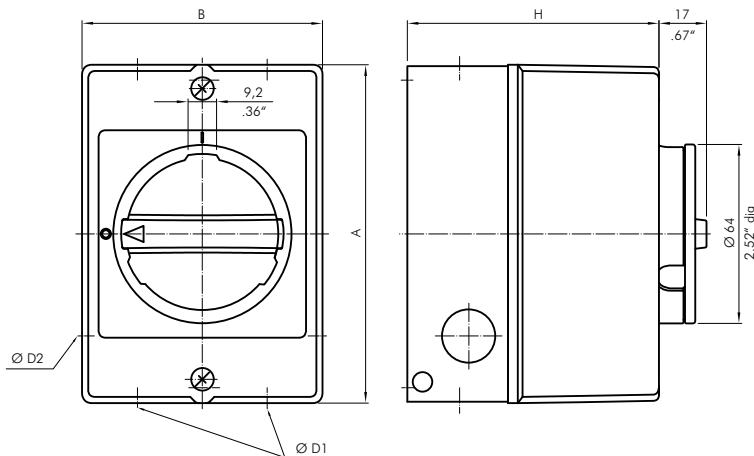
G20 FT2



L		1	2	3	4	5	6	7	8	9	10	11	12
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		60,2	71,2	97	108	119	130	141	152	163	174	185	196
inch		2.37	2.80	3.81	4.25	4.69	5.12	5.55	5.98	6.42	6.85	7.28	7.72

Enclosure

G20 KS51V

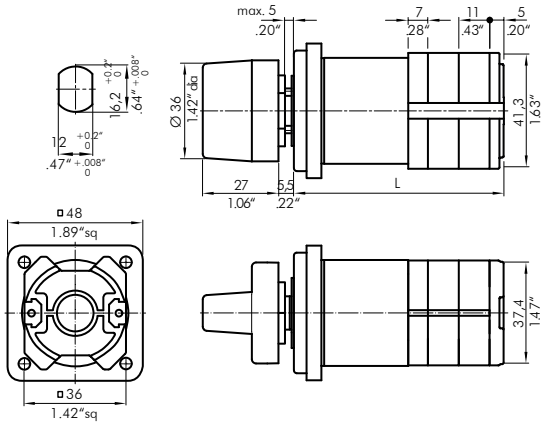


	A	B	D1	D2	H _A	H _B
mm	121	86	20,5	20,5	81	90
inch	4.76	3.39	0.81	0.81	3.19	3.54

< Back to the table of contents >

DIMENSIONS G20S/G20

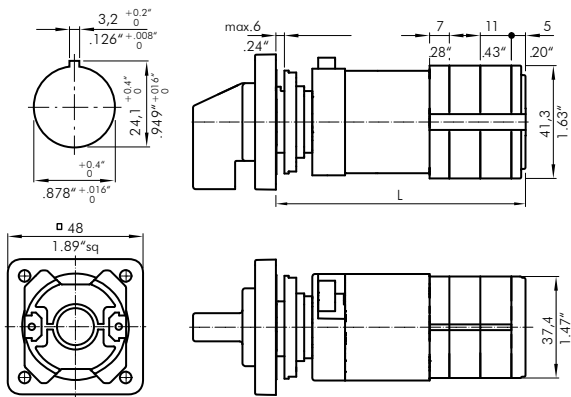
Four Hole Panel Mounting G20S/G20 FT16



L		G20S											
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		63,8	74,8	85,8	96,8	107,8	118,8	129,8	140,8	151,8	162,8	173,8	184,8
inch		2.51	2.94	3.38	3.81	4.24	4.68	5.11	5.54	5.98	6.41	6.84	7.28

L		G20											
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		46,5	57,5	68,5	79,5	90,5	101,5	112,5	123,5	134,5	145,5	156,5	167,5
inch		1.83	2.26	2.70	3.13	3.56	4.00	4.43	4.86	5.30	5.73	6.16	6.59

Single Hole Mounting G20S/G20 FT2



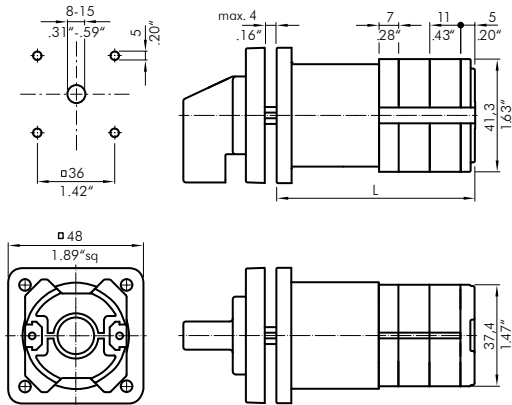
L		G20S											
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		77,5	88,5	99,5	110,5	121,5	132,5	143,5	154,5	165,5	176,5	187,5	198,5
inch		3.05	3.48	3.92	4.35	4.78	5.22	5.65	6.08	6.52	6.95	7.38	7.81

L		G20											
Stages		1	2	3	4	5	6	7	8	9	10	11	12
mm		60,2	71,2	97	108	119	130	141	152	163	174	185	196
inch		2.37	2.80	3.81	4.25	4.69	5.12	5.55	5.98	6.42	6.85	7.28	7.72

[Back to the table of contents](#)

Four Hole Panel Mounting

G20S/G20 E



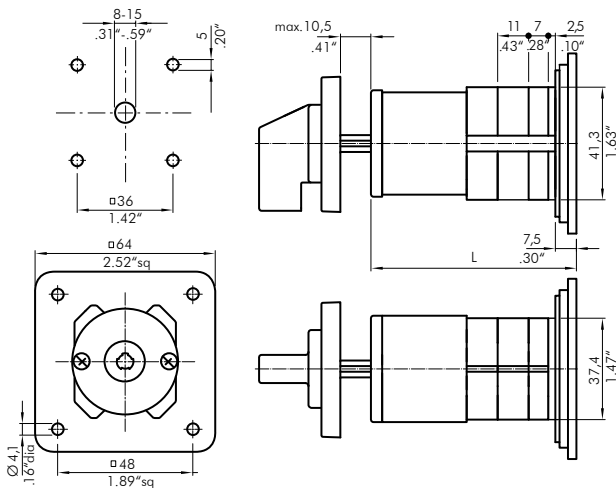
L		G20S											
Stages	1	2	3	4	5	6	7	8	9	10	11	12	
mm	59,3	70,3	81,3	92,3	103,3	114,3	125,3	136,3	147,3	158,3	169,3	180,3	
inch	2.33	2.77	3.20	3.63	4.07	4.50	4.93	5.37	5.80	6.23	6.67	7.10	

L		G20											
Stages	1	2	3	4	5	6	7	8	9	10	11	12	
mm	42	53	78,8	89,8	100,8	111,8	122,8	133,8	144,8	155,8	166,8	177,8	
inch	1.65	2.09	3.11	3.54	3.97	4.40	4.83	5.27	5.70	6.13	6.57	7	

< Back to the table of contents >

Base Mounting – Four Hole Mounting

G20S/G20 VE



L		G20S											
Stages	1	2	3	4	5	6	7	8	9	10	11	12	
mm	62	73	84	95	106	117	128	139	150	161	172	183	
inch	2.44	2.87	3.31	3.74	4.17	4.61	5.04	5.47	5.91	6.34	6.77	7.20	

L		G20											
Stages	1	2	3	4	5	6	7	8	9	10	11	12	
mm	44,7	55,7	66,7	92,5	103,5	114,5	125,5	136,5	147,5	158,5	169,5	180,5	
inch	1.76	2.19	2.63	3.64	4.07	4.51	4.94	5.37	5.81	6.24	6.67	7.11	



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