



Kraus & Naimer

BLUE LINE switchgear

DC-SWITCH WITH  
KNIFE CONTACTS

# G20S/G20



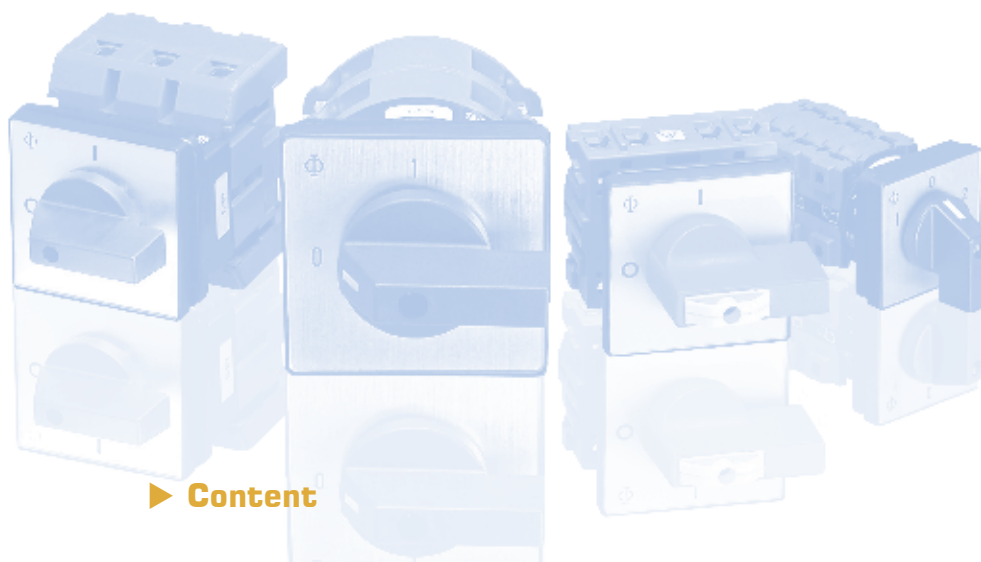
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BLUE LINE switchgear



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# G20S/G20

## ► Ideal solution for DC applications

With the **G20S** respectively **G20 Kraus & Naimer** has developed a newly designed DC switch. The compact and rugged disconnect 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.

## G20S/G20

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

Rated Insulation Voltage	Ui	690 V AC
Rated Insulation Voltage	Ui	500 V DC
Rated Insulation Voltage	Ui	1000 V AC / DC possible with series connection
Rated Thermal Current	Iu/Ith	20 A

### Maximum permissible wire gage

Single-core or stranded wire	2 x 2,5 mm <sup>2</sup> / AWG 12
Flexible wire	2 x 2,5 mm <sup>2</sup> / AWG 14
Flexible wire with sleeving in acc. with DIN 46228	2 x 2,5 mm <sup>2</sup>

### ► Alternative types of connection

<b>G20S-6</b> <b>G20-6</b>	→	with angled quick connects
<b>G20S-8</b> <b>G20-8</b>	→	terminal extensions for ring type cable lugs

### ► General Use

<b>150 V DC</b>	→	<b>20 Amp.</b>
<b>300 V AC Pilot Duty</b>	→	<b>10 Amp. B 300</b>

c  US

## ► Electrical data of ON/OFF-Switches

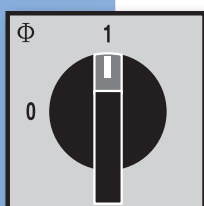
Dimensions  
on page 10

Rated Utilization Category	Contacts in series Permissible Voltage						Rated Operational Current Ie/A	
	1	2	3	4	5	6	G20S	G20
<b>DC-21 A</b>	250	500	750	1000	-	-	20	8
	440	880	-	-	-	-	13	4
<b>DC-22 A</b>	250	500	750	1000	-	-	20	2
	330	660	990	-	-	-	10	1
	440	880	-	-	-	-	5	0,5
<b>DC-23 A</b>	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
<b>c RL<sup>us</sup>*</b>	150	300	-	600	-	-	20	-

### G20S/G20-ON/OFF-Switches 0-1

### SWITCHES

Pole	IEC: 250 V DC-Generale Use UL <sup>2</sup> : 150 V		500 V 300 V		750 V -		750 V -		1000 V 600 V	
	1 contact in serie	Stages	2 contacts in serie	Stages	2+1 contacts <sup>1)</sup>	Stages	3 contacts in serie	Stages	4 contacts in serie	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		500 V		750 V		750 V		1000 V	
	1 contact in serie	Stages	2 contacts in serie	Stages	2+1 contacts <sup>1)</sup>	Stages	3 contacts in serie	Stages	4 contacts in serie	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	-	-	-	-	-	-

<sup>1)</sup> 3 contacts in the circuit: 2 contacts in serie in the +line, 1 contact in the -line

\* Ratings applicable for Disconnectors in Photovoltaic

## ► Electrical data of Change Over Switches

Rated Utilization Category	Contacts in series Permissible Voltage						Rated Operational Current Ie/A	
	1	2	3	4	5	6	G20S	G20
<b>DC-21 A</b>	250	500	750	1000	-	-	7	*
	440	880	-	-	-	-	1	*
<b>DC-22 A</b>	250	500	750	1000	-	-	3	*
	330	660	990	-	-	-	1	*
<b>DC-23 A</b>	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

### G20S/G20-Change Over Switches 1-2

### SWITCHES

Pole	250 V 1 contact in serie	Stages	500 V 2 contacts in serie	Stages	750 V 2+1 contacts <sup>1)</sup>	Stages	750 V 3 contacts in serie	Stages	1000 V 4 contacts in serie	Stages
1 pole	D111	1	D211	2	-	-	-	-	-	-
2 pole	D112	2	D212	4	-	-	-	-	-	-
3 pole	D113	3	D213	6	-	-	-	-	-	-
4 pole	D114	4	D214	8	-	-	-	-	-	-

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

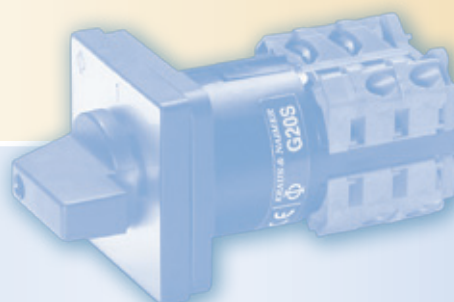
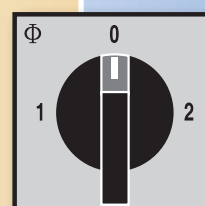
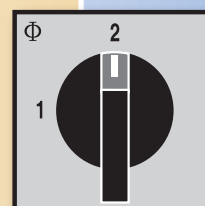
### G20S/G20-Change Over Switches with 0 position 1-0-2

### SWITCHES

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

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	-	-	-	-	-	-	-	-



## ► Pre-configured Main Switches G20

Rated Utilization Category	Contacts in series Permissible Voltage				Rated Operational Current $I_e/A$ G20
	1	2	3	4	
<b>DC-23 A</b>	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

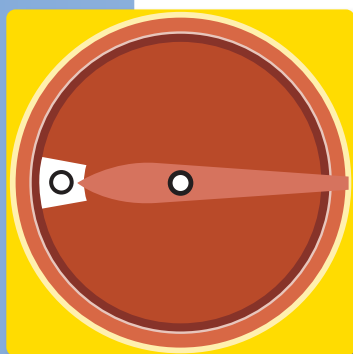
Pole	Main Switches	Main Switches with Emergency Function	Stages
1	G20 TD1101/01 E	G20 TD2101/01 E	1
2	G20 TD1102/01 E	G20 TD2102/01 E	2
3	G20 TD1103/01 E	G20 TD2103/01 E	3
4	G20 TD1104/01 E	G20 TD2104/01 E	4
5	G20 TD1105/01 E	G20 TD2105/01 E	5
6	G20 TD1106/01 E	G20 TD2106/01 E	6

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

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 TD2304/01 E	12

1	G20 TD1401/01 E	G20 TD2401/01 E	3
2	G20 TD1402/01 E	G20 TD2402/01 E	6
3	G20 TD1403/01 E	G20 TD2403/01 E	9

Dimensions on page 9



48 x 48 mm

## ► Pre-configured Main Switches G20

Rated Utilization Category	Contacts in series Permissible Voltage				Rated Operational Current Ie/A G20
	1	2	3	4	
<b>DC-23 A</b>	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

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	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

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 TD2304/04 FT2	12

1	G20 TD1401/04 FT2	G20 TD2401/04 FT2	3
2	G20 TD1402/04 FT2	G20 TD2402/04 FT2	6
3	G20 TD1403/04 FT2	G20 TD2403/04 FT2	9

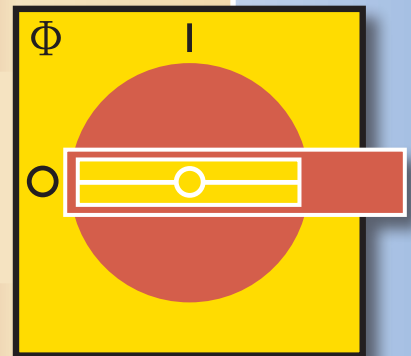
1  
max.  
**250V**

2  
max.  
**500V**

3  
max.  
**750V**

4  
max.  
**1000V**

Dimensions  
on page 9

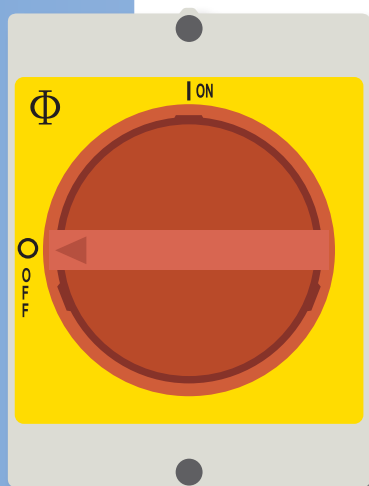


48 x 48 mm

## ► Pre-configured Main Switches G20

Rated Utilization Category	Contacts in series Permissible Voltage			Rated Operational Current $I_e/A$ G20
	1	2	3	
<b>DC-23A</b>	24	48	72	20
	48	96	144	12
	60	120	180	5
	110	220	330	3
	160	320	480	2
	250	500	750	1

Dimensions  
on page 9



1

max.  
**250V**

2

max.  
**500V**

3

max.  
**750V**

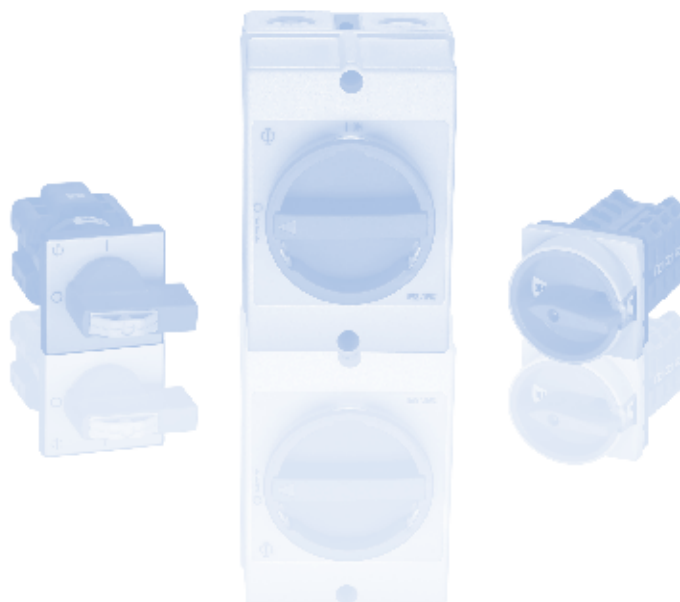
Pole	Main Switches	Main Switches with Emergency Function	Height
1	G20 TD1101/33 KS51V	G20 TD2101/33 KS51V	A
2	G20 TD1102/33 KS51V	G20 TD2102/33 KS51V	B
3	G20 TD1103/33 KS51V	G20 TD2103/33 KS51V	B

1	G20 TD1201/33 KS51V	G20 TD2201/33 KS51V	B
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1	G20 TD1301/33 KS51V	G20 TD2301/33 KS51V	B
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**A:** Height: 81 mm

**B:** Height: 90 mm



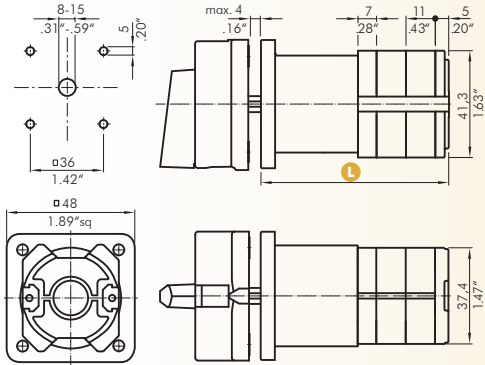


# ► Dimensions | Pre-configured Main Switches G20

## G20 E

### Four Hole Panel Mounting

lockable handle disk



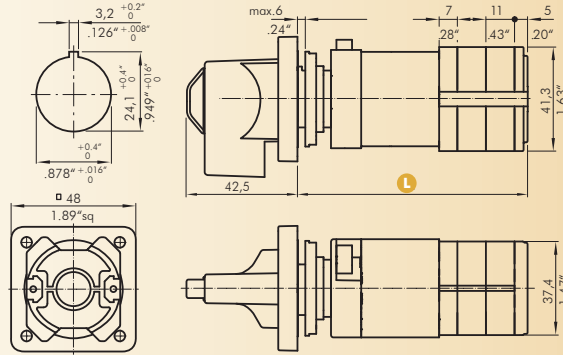
### L G20

Fluchten	1	2	3	4	5	6	7	8	9	10	11	12
mm	42	53	64	75	86	97	108	119	130	141	152	163
Zoll	1.65"	2.09"	2.52"	2.95"	3.39"	3.82"	4.25"	4.69"	5.12"	5.55"	5.98"	6.42"

## G20 FT2

### Single Hole Mounting

handle with lock-bar

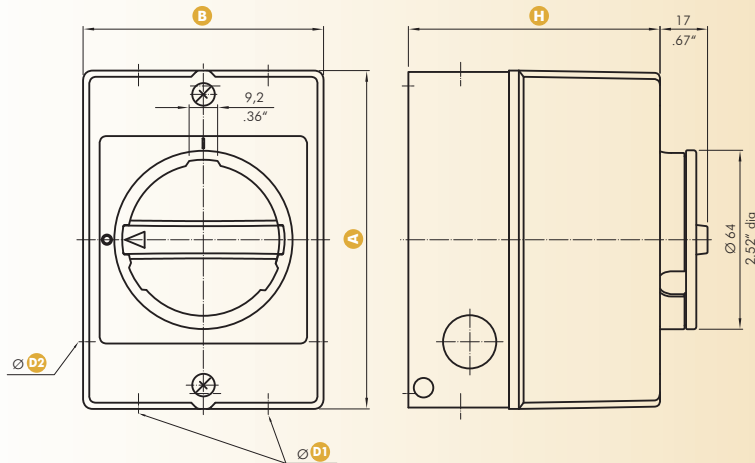


### L G20

Fluchten	1	2	3	4	5	6	7	8	9	10	11	12
mm	60.2	71.2	82.2	93.2	104.2	115.2	126.2	137.2	148.2	159.2	170.2	181.2
Zoll	2.37"	2.80"	3.24"	3.67"	4.10"	4.54"	4.97"	5.40"	5.83"	6.27"	6.70"	7.13"

## G20 KS51V

### Enclosure



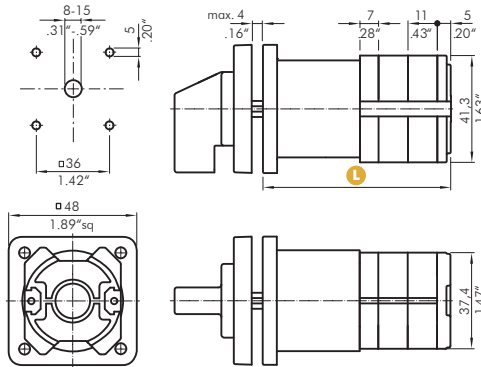
### Enclosure KS51V

	A	B	D1	D2	H <sub>A</sub>	H <sub>B</sub>
mm	121	86	20.5	20.5	81	90
inch	4.76"	3.39"	0.81"	0.81"	3.19"	3.54"

## ► Dimensions | G20S/G20

### G20S/G20 E

#### Four Hole Panel Mounting



#### L G20S

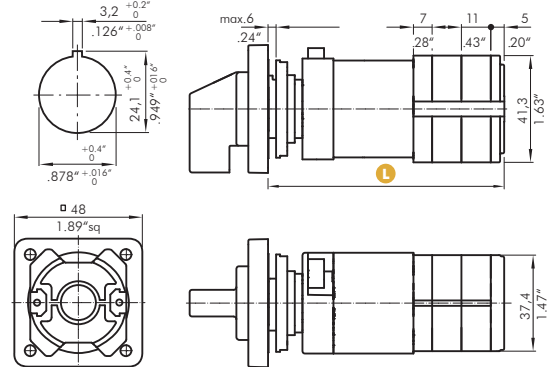
stages	1	2	3	4	5	6	7	8	9	10	11	12
mm	59.3	70.3	81.3	92.3	103.3	114.3	125.3	136.3	147.3	158.3	169.3	180.3
inch	2.33"	2.77"	3.20"	3.63"	4.07"	4.50"	4.93"	5.37"	5.80"	6.23"	6.67"	7.10"

#### L G20

stages	1	2	3	4	5	6	7	8	9	10	11	12
mm	42	53	64	75	86	97	108	119	130	141	152	163
inch	1.65"	2.09"	2.52"	2.95"	3.39"	3.82"	4.25"	4.69"	5.12"	5.55"	5.98"	6.42"

### G20S/G20 FT2

#### Single Hole Mounting



#### L G20S

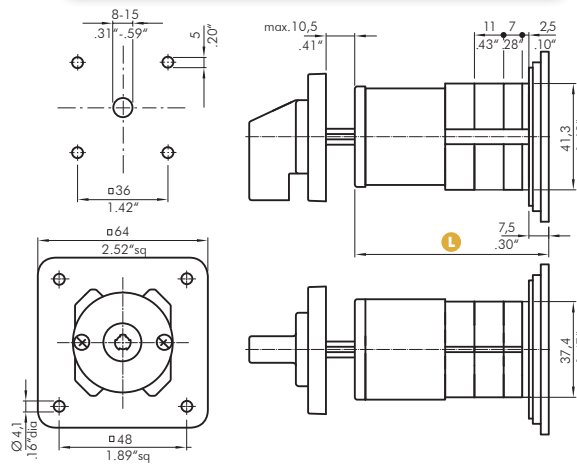
stages	1	2	3	4	5	6	7	8	9	10	11	12
mm	77.5	88.5	99.5	110.5	121.5	132.5	143.5	154.5	165.5	176.5	187.5	198.5
inch	3.05"	3.48"	3.92"	4.35"	4.78"	5.22"	5.65"	6.08"	6.52"	6.95"	7.38"	7.81"

#### L G20

stages	1	2	3	4	5	6	7	8	9	10	11	12
mm	60.2	71.2	82.2	93.2	104.2	115.2	126.2	137.2	148.2	159.2	170.2	181.2
inch	2.37"	2.80"	3.24"	3.67"	4.10"	4.54"	4.97"	5.40"	5.83"	6.27"	6.70"	7.13"

### G20S/G20 VE

#### Base Mounting – Four Hole Mounting



#### 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	77.7	88.7	99.7	110.7	121.7	132.7	143.7	154.7	165.7
inch	1.76"	2.19"	2.63"	3.06"	3.49"	3.93"	4.36"	4.79"	5.22"	5.66"	6.09"	6.52"



**Catalog 100**



**Catalog 101**



**Catalog 110**



**Catalog 120**



**Catalog 130**



**Catalog 150**



**Catalog 200**



**Catalog 302**



**Catalog 500**



**Main Switches  
with spring clamp  
terminals**

**Catalog 100: C-, CA-, CAD-, CL-, L-Switches: 10A-2400A**

**Catalog 101: Optional Extras and Enclosures**

**Catalog 110: A-Switches: 6A - 25A**

**Catalog 120: CG-, CH-, CHR-Switches: 10A-25A**

**Catalog 130: DH-, DHR-, DK-, DKR-, D-Switches: 20mA-25A/30mV-690V**

**Catalog 150: KG/KH-Switches: 20A-315A**

**Catalog 200: Contactors 16 A-115 A, Motor Starters 1,5 kW-55 kW**

**Catalog 302: Push Buttons and Pilot Lights, 22.5mm**

**Catalog 500: Main Switches, Maintenance Switches, Switch Disconnectors**

**Main Switches and Switch Disconnectors KC Switch Series 16A-32A**



Kraus & Naimer  
BLUE LINE switchgear

