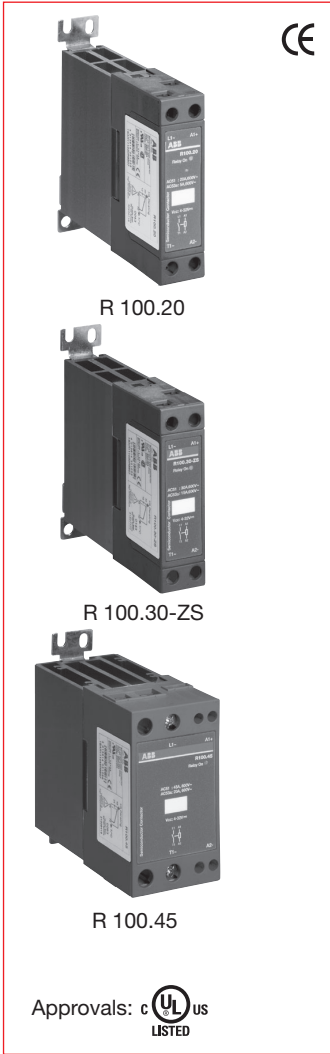


# Semiconductor Contactors

## R100.xx Range

### Single Phase



- Compact design, Thyristor Output
- Zero voltage and instantaneous switching
- Rated operating voltage 42...660 V AC
- LED for status indication
- Current ranges: 20 A, 30 A, 45 A (thyristors)
- Integrated heat sink, ready for use
- Mounting on 35 mm DIN rail or screw mounting on plate
- Cage terminal with touch proof design

#### Ordering Table

Type	Control Voltage	Load Current	Zero Voltage Switching	AC51 at 25 °C	AC53a at 25 °C	Part Number	Weight kg/lb	Width
R100.20	4...32 V DC	20 A	•	20 A	5 A	1SAR 111 020 R 8607	0.25/0.55	22.5 mm
R100.30-IO	4...32 V DC	30 A		30 A	15 A	1SAR 113 030 R 8607	0.25/0.55	22.5 mm
R100.30-ZS	4.5...32 V DC	30 A	•	30 A	15 A	1SAR 111 030 R 8607	0.25/0.55	22.5 mm
R100.45	4.5...32 V DC	45 A	•	45 A	20 A	1SAR 111 045 R 8607	0.49/1.08	45 mm
R100.45-SG	4...32 V DC	45 A*	•	45 A	20 A	1SAR 111 045 R 9607	0.49/1.08	45 mm

\*with integrated overtemperature protection and LED

#### Technical Data

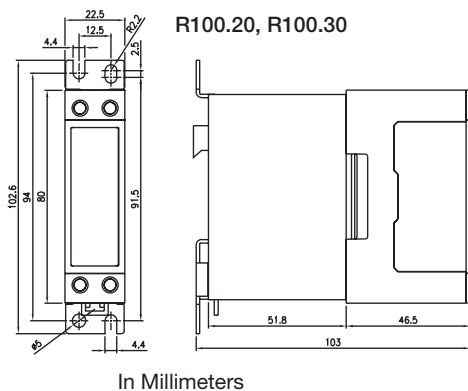
Type	R100.20	R100.30-IO	R100.30-ZS	R100.45	R100.45-SG
Rated operating voltage $V_e$ ( $V_{eff,max}$ )	42...660 V AC	42...660 V AC	42...660 V AC	42...660 V AC	42...660 V AC
Period. peak inverse voltage ( $V_{peak}$ )	1200 V <sub>pp</sub>	1200 V <sub>pp</sub>	1200 V <sub>pp</sub>	1200 V <sub>pp</sub>	1200 V <sub>pp</sub>
Operating frequency	45-65 Hz	45-65 Hz	45-65 Hz	45-65 Hz	45-65 Hz
Off-state leakage current (T = 25 °C)	≤ 3 mA <sub>rms</sub>	≤ 3 mA <sub>rms</sub>	≤ 3 mA <sub>rms</sub>	≤ 3 mA <sub>rms</sub>	≤ 3 mA <sub>rms</sub>
Voltage drop (T = 25 °C)	1.6 V <sub>rms</sub>	1.6 V <sub>rms</sub>	1.6 V <sub>rms</sub>	1.6 V <sub>rms</sub>	1.6 V <sub>rms</sub>
Permissible voltage gradient dv/dt	500 V/μs	500 V/μs	500 V/μs	500 V/μs	500 V/μs
Minimum load current	≥350 mA	≥150 mA	≥150 mA	≥150 mA	≥150 mA
Rated load current (Ta = 25 °C)	20 A AC/5 A AC	30 A AC/15 A AC		45 A AC/20 A AC	
Surge current I <sub>ISM</sub> (t = 10 ms)/(t = 1 s)	≤250 A/35 A AC	≤400 A/125 A AC		≤1150 A/125 A AC	
Max. load integral ∫ i <sup>2</sup> dt (t = 10 ms)	310 A <sup>2</sup> s	1800 A <sup>2</sup> s	1800 A <sup>2</sup> s	6600 A <sup>2</sup> s	6600 A <sup>2</sup> s
Critical current gradient di/dt	≥ 10 A/μs	≥ 100 A/μs	≥ 100 A/μs	≥ 150 A/μs	≥ 150 A/μs
Control voltage	4...32 V DC	4...32 V DC	4.5...32 V DC	4.5...32 V DC	4...32 V DC
Make voltage	Max. 3.8 V DC	3.8 V DC	4.25 V DC	4.25 V DC	3.8 V DC
Break voltage	Min. 1.2 V DC	1.2 V DC	1 V DC	1 V DC	1.2 V DC
Input current (at V <sub>max</sub> )	≤12 mA	≤12 mA	≤15 mA	≤15 mA	≤12 mA
Turn-on time	≤20ms	≤20ms	≤1 s	≤1 s	≤20ms
Turn-off time	≤20ms	≤20ms	≤20ms	≤20ms	≤20ms
Inverse polarity voltage	32 V DC	32 V DC	32 V DC	32 V DC	32 V DC
Power factor (cos φ)			≥ 0.5 (at 600 V AC)		
Operating/Storage Temperature			-30 °C ...+80 °C/-40 °C ... 100 °C		
Barrier-layer temperature			125 °C		
Dielectric strength			4000 V		
Cond. cross section input terminals			max. 2 x 2.5 mm <sup>2</sup> / 1 x 4 mm <sup>2</sup>		
Cond. cross section / output terminals			max. 2 x 2.5 mm <sup>2</sup> / 1 x 4 mm <sup>2</sup> / 1 x 25 mm <sup>2</sup> (R100.45 = 1 x 25mm <sup>2</sup> )		

OUTPUT

INPUT

GENERAL DATA

#### Mechanical Drawing



#### Load limit curves

