BDCD-31VC

30 Watt

- **DC/DC converter modules**
- **DIN Rail version**
- **4:1 input voltage range 9–36 VDC**
- **Input / Output galvanically isolated**
- **High efficiency up to 89 %**
- **Extended temperature range -40...+85 °C**
- **Insulation voltage 1500 VDC**
- **Built-in EMI filter**
- **Operating altitude 5000 m**

Article No.	Output power	Input voltage	Output voltage	Output current min	max	Efficiency (typ)
BDCD-3105VC	30 W	9–36 VDC (24 VDC nom.)	+5 V	0 mA	6000 mA	89 %
BDCD-3112VC			+12 V	0 mA	2500 mA	88 %
BDCD-3124VC			+24 V	0 mA	1250 mA	88 %

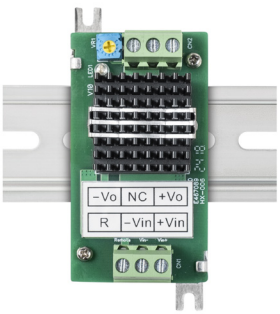
suffix **D**: DIN Rail model with detachable DIN Rail mounting plate

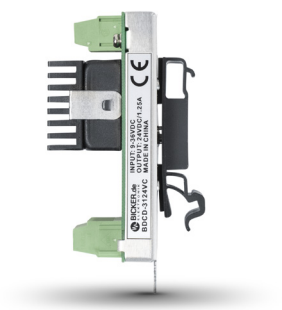
Further types in different input and output voltages are available on request.

How to read the Article No.

BDCD - XX YY Z

- Input voltage (**VC:** 9–36 VDC)
- Output voltage
- Power (31 = 30 W)
- Product series / DIN Rail version





Technical data	
Input voltage	24 VDC (9–36 VDC)
Input current max.	4000 mA
Starting time	10 ms
Input fuse	6 A fast to be added by customer (page 3)
Output voltage accuracy	±1.5 % max., at full load
Output voltage adjust range	VR 5 V / 12 V ±10 %, 24 V N.A.
Load regulation	±5 %, measured from full load to no load
Ripple & Noise*	5 V/12 V: 100 mV_{pp} max, 24 V: 200 mV_{pp}
Capacitive load	5 V/6000 µF, 12 V/2500 µF, 24 V/1250 µF
Remote on/off control	ON: 3.5 – 36 V or open circuit OFF: 0 – 1.2 V
Protection	Overvoltage protection: 50 V surge for 100 msec at input Short circuit protection: auto-recovery Input under-voltage protection: 8.4 V Overcurrent protection: 110…170 % Input reverse protection (TVS or Zener diode): if reverse input polarity, the fuse will protect converter by melting
LED	LED ON, DCDC ON
Insulation voltage	Input-Output: 1500 VDC
Insulation resistance	Input-Output: 1000 MΩ
Insulation capacity	3500 pF (typ)
Switching frequency	270 kHz typ (5 V) / 330 KHz, typ (12 V / 24 V)
MTBF	>1 000 000 h according to MIL-HDBK-217F @25 °C
Material	Base plate: aluminium DC module: black coated copper
Temperature	Operating: -40…+85 °C / Storage: -55…+125 °C
Derating	See derating diagram
Max. operation altitude	5000 m
Humidity	Operating: 10…85 % RH, non-condensing / Storage: 10…90 % RH, non-condensing
Vibration	MIL-STD-810F
Dimensions (W x D x H)	84.2 x 37.5 x 43.4 mm
Weight (net)	70 g

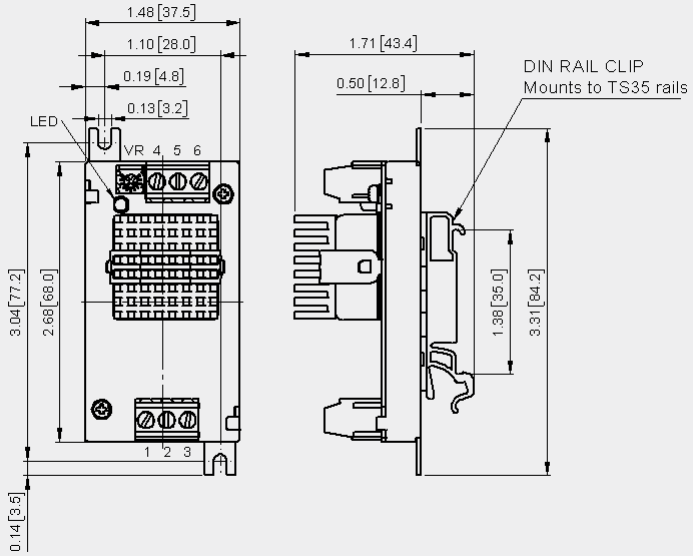
** Ripple & Noise was measured with 1 µF ceramic capacitor. All data was measured at +25 °C, operating humidity <75 %, nominal input voltage. We recommend to use a cable as short as possible to connect module and load. As a power component this modul is for assembly purposes only and it must not be operated in unassembled condition.*

DISPOSAL

Electric and electronic devices must not be disposed with domestic waste!

Drawing

Inch [mm]
Tolerance ±0.5 mm

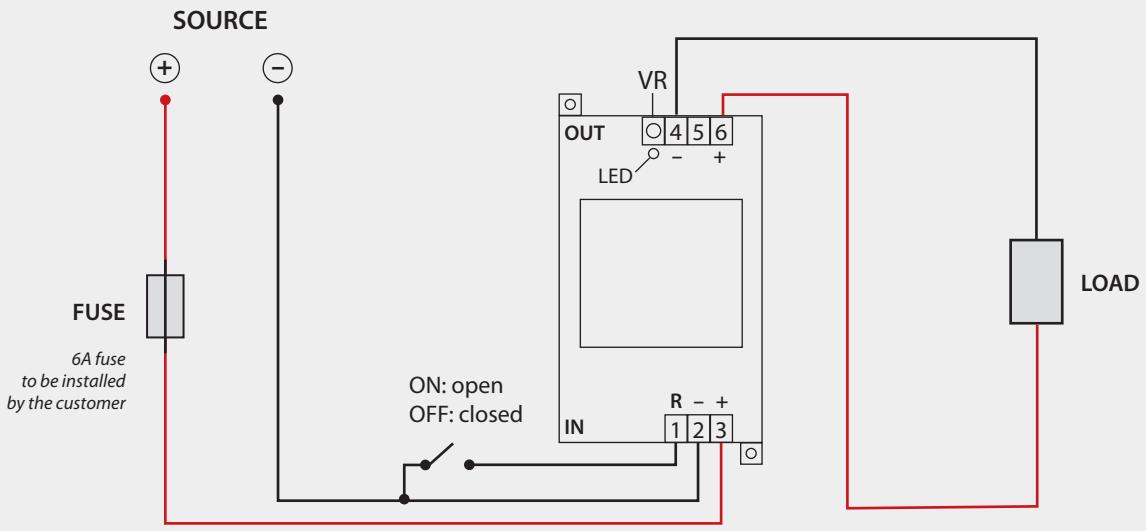


Pin assignment: 5 V / 12 V	
1	Remote
2	$-V_{IN}$
3	$+V_{IN}$
4	$-V_{OUT}$
5	N.C.
6	$+V_{OUT}$
VR*	YES

Pin assignment: 24 V	
1	Remote
2	$-V_{IN}$
3	$+V_{IN}$
4	$-V_{OUT}$
5	N.C.
6	$+V_{OUT}$
VR	NO

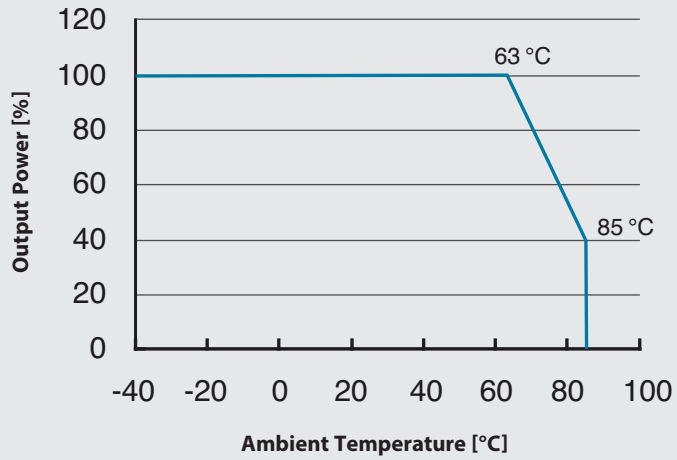
**variable resistor*

Line protection

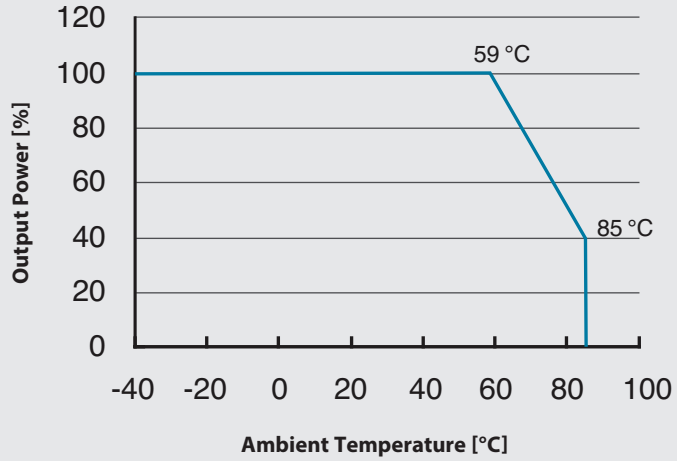


Derating

BDCD-3105VC – Derating Curve (V_{IN} = Nominal)



BDCD-3112VC – Derating Curve (V_{IN} = Nominal)



BDCD-3124VC – Derating Curve (V_{IN} = Nominal)