

CONVERTERS/RECTIFIER MODULES

AC/DC and DC/DC converters



MDD, GLS, GSS, NG, NT

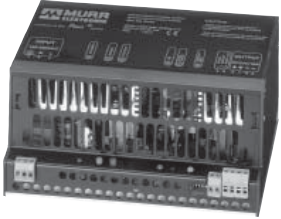
AC/DC and DC/DC converters.

Regulated or adjustable with touch protection.

If a stable DC voltage is required and an AC voltage or unsmoothed DC voltage are available, it is possible to use the AC/DC and DC/DC converters from Murrelektronik.

Output current range: 0.5...4 A

from page 1.6.2



MPD

Primary switch mode DC/DC converters with galvanic separation.

All units are touch protected, overload and short-circuit protected and can be snapped on to DIN-rail.

Input voltage: 40...300 V DC

Output voltage: 24 V DC SELV

22...28 V DC adjustable

Output current: 3/ 5/ 10/ 20 A

from page 1.6.5

Rectifier modules



NG

If a transformer is already in place, which is supplying the necessary AC voltage for an application, then it is possible to use a smoothing power supply without transformer.

On this rectifier module are situated an LED status indicator, a fuse and the smoothing capacitors.

Output current range: 2.6...10 A

page 1.6.7

CONVERTERS/RECTIFIER MODULES

DC/DC converters switched mode

– with galvanic separation

– touch protected to
EN 60529 (IP20)

MDD

Input 24 V DC
Output 24 V DC



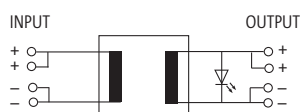
MDD

Input 24 V DC
Output 12 V DC

MDD

Input 24 V DC
Output 5 V DC

Circuit diagram



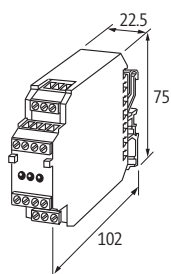
Ordering data	Art.-No.	Art.-No.	Art.-No.
Output rating			
24 V DC / 0.3 A 7 W	85655		
12 V DC / 0.7 A 8 W		85656	
5 V DC / 1.5 A 7.5 W			85657

Input	
Input voltage	24 V DC
Input current	0.6 A
Input fuse (external)	2.0 A T

Output			
Output voltage	24 V DC SELV ± 2 %	12 V DC SELV ± 2 %	5 V DC SELV ± 2 %
Max. output current	0.3 A	0.7 A	1.5 A
Ripple	≤ 0.2 % eff		
Output fuse	short-circuit and overload protected, restart after overload by sensor supply removal		

General data	
Standards	EN 61204-3
Test voltage input/output	4 kV AC
Temperature range	0...+50 °C, no condensation
Mounting method	DIN-rail mounting TH35 or G32 (EN 60715)
Weight	0.12 kg

Dimension drawing



Notes

CONVERTERS/RECTIFIER MODULES

DC/DC converters switched mode

- with galvanic separation
- touch protected to EN 60529 (IP20)

MDD

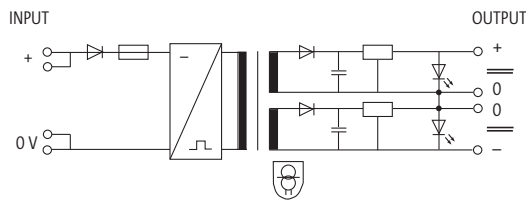
Input 24 V DC
Output ± 10 V DC



MDD

Input 24 V DC
Output ± 15 V DC

Circuit diagram



Ordering data

	Output rating	Art.-No.	Art.-No.
± 10 V DC/2 x 250 mA	5 W	85658	
± 15 V DC/2 x 250 mA	7 W		85659

Input

Input voltage	24 V DC
Input current	0.85 A
Input fuse (external)	2.0 A T, internal

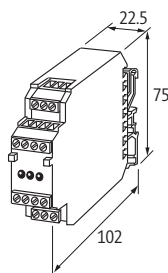
Output

Output voltage	± 10 V DC SELV $\pm 5\%$	± 15 V DC SELV $\pm 5\%$
Max. output current	2 x 250 mA	
Ripple	$\leq 0.2\%$ eff	
Output fuse	short-circuit and overload protected, restart after overload by sensor supply removal	

General data

Standards	EN 61204-3
Test voltage input/output	4 kV AC
Temperature range	0...+50 °C, no condensation
Mounting method	DIN-rail mounting TH35 or G32 (EN 60715)
Weight	0.12 kg

Dimension drawing



Notes

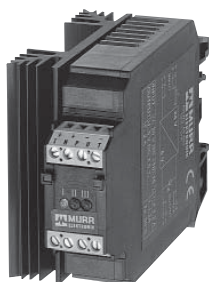
CONVERTERS/RECTIFIER MODULES

DC/DC converters
AC/DC converters

– touch protected to
EN 60529 (IP20)

GLS

Input 24 V DC
Output regulated
5 V DC



GSS

Input 24 V DC
Output switched mode
5 V DC

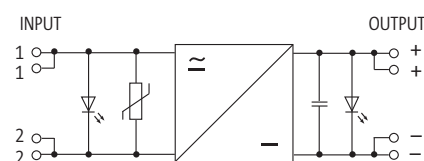
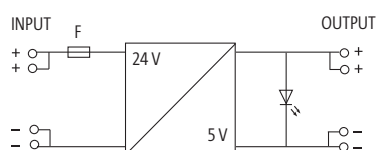


NT

Input 24 V AC
Output adjustable via potentiometer



Circuit diagram

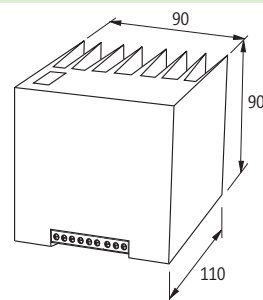
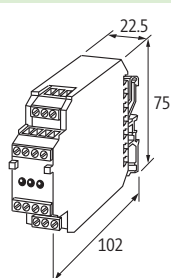
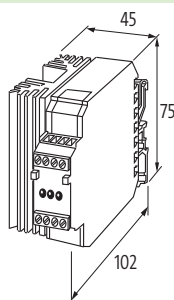


Ordering data	Art.-No.	Art.-No.	Art.-No.
Output rating			
5 V DC/ 1.2 A 6 W	85600		
5 V DC/ 4 A 20 W		85650	
5...35 V DC/ 3.5 A 122 W			85660
Input			
Input voltage	24 V DC +10 % - 15 %	15...40 V DC	10...32 V AC; 12...42 V DC
Input current	1.2 A	1 A (24 V DC: 4 A)	max. 3 A
Frequency	–		50/60 Hz
Input fuse	2.0 A T		6.3 A T
Output			
Output voltage	5 V DC SELV ± 5 %		5...35 V DC SELV ($U_{OUTmax.} = U_{IN} - 5 V$)
Max. output current	1.2 A	4 A	3.5 A
Ripple	≤ 0.2 % eff		≤ 0.3 Vss
Output fuse	short-circuit protected		

General data

Temperature range	-20...+60 °C, no condensation		
Mounting method	DIN-rail mounting TH35 (EN 60715)		
Weight	0.2 kg	0.13 kg	0.8 kg

Dimension drawing



Notes

CONVERTERS/RECTIFIER MODULES

DC/DC converters primary switched

– with galvanic separation
short-circuit and
overload protected

– touch protected to
EN 60529 (IP20)

MPD

Input voltage
40...60 V DC

MPD

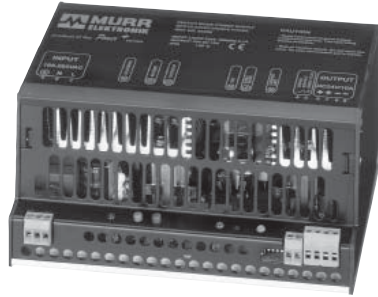
Input voltage
70...160 V DC

MPD

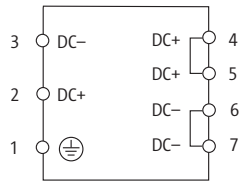
Input voltage
100...160 V DC

MPD

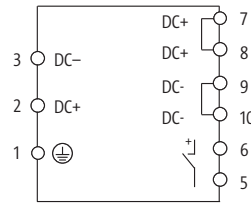
Input voltage
100...160 V DC



Circuit diagram



Version 5 A



Version 10 and 20 A

Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Output rating				
24 V DC/ 5 A		857710		
24 V DC/ 10 A			857688	
24 V DC/ 20 A	857691			857689

Input				
Input voltage	40...60 V DC	70...160 V DC	100...160 V DC	
Input current	11.2 A (48 V DC)	1.35 A (110 V DC)	2.5 A (110 V DC)	4.9 A (110 V DC)
Inrush current after 1 ms	no	≤ 10 A	no	no
Primary fusing	max. 35 A	10 A	10 A	16 A
Output				
Output voltage SELV	24 V DC, ± 1 %; 22...28 adjustable	24 V DC, + 3 – 1 %	24 V DC, ± 1 %; 22...28 adjustable	
Output current	20 A (60 °C); 24 A (40 °C)	5 A (60 °C); 6 A (40 °C)	10 A (60 °C); 12 A (40 °C)	20 A (60 °C); 24 A (40 °C)
Efficiency	90 %	85 %	89 %	0.9
Mains failure bridging	≥ 2.5 ms (48 V DC)	≥ 10 ms (110 V DC)	≥ 3 ms (110 V DC)	
Ripple; Spikes	≤ 20 mV eff; ≤ 100 mV ss			
Protection	short-circuit and overload protected, switch off at phase failure, pre-warning and switching off when overloaded ¹⁾ , alarm signal with relay contact ¹⁾			
Status indicator	green LED in operation, red LED shut down ¹⁾ , yellow LED pre-warning of overloaded or high temperature ¹⁾			
Parallel usage/serial usage	yes/yes	no/yes	yes/yes	
Alarm output ^{1) 2)}	electr. relay max. 60 V DC/ 0.2 A, collective alarm for all faults and pre-warnings, quit via green reset button			
Test stop button ¹⁾	for test purposes, the secondary voltage can be switched off short term with the test stop button			

General data				
Standards	EN 60950-1, EN 61204-3, EN 55022 B			
Temperature range	0...+60 °C			
Relative humidity	30...90 %, no condensation			
Mounting method	DIN-rail mounting TH35 (EN 60715), additional plate for screw mounting Art.-No. 89500			

Dimension drawing (mm)			H x W x D	Weight
	5 A		132 x 110 x 72	0.8 kg
	10 A		132 x 198 x 101	1.7 kg
	20 A		132 x 243 x 123	2.5 kg

Notes				
	¹⁾ Units from 10 A onwards. Other versions on request.			
	²⁾ Units decoupling through diode block at parallel usage.			

Converters/Rectifier modules

CONVERTERS/RECTIFIER MODULES

DC/DC converters primary switched

– with galvanic separation
short-circuit and
overload protected

– touch protected to
EN 60529 (IP20)

MPD

Input voltage
120...300 V DC

MPD

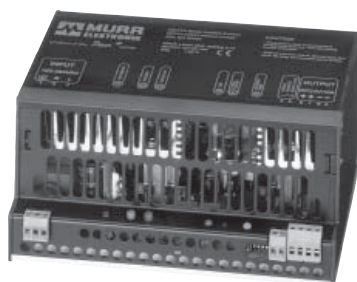
Input voltage
115...300 V DC

MPD

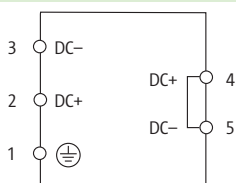
Input voltage
200...300 V DC

MPD

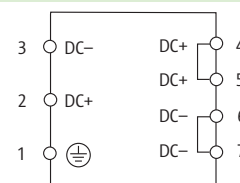
Input voltage
200...300 V DC



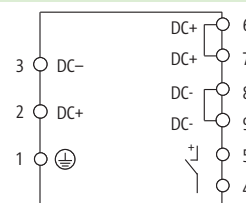
Circuit diagram



Version 3 A



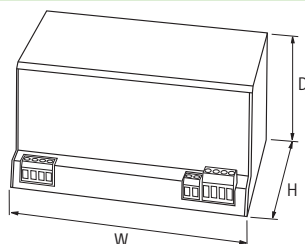
Version 5 A



Version 10 and 20 A

Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Output rating				
24 V DC/ 3 A	72 W	857687		
24 V DC/ 5 A	120 W		857651	
24 V DC/10A	240 W			857652
24 V DC/20A	480 W			857653
Input				
Input voltage	120...300 V DC	115...300 V DC	200...300 V DC	
Input current (220 V DC)	0.39 A	0.63 A	1.2 A	2.4 A
Inrush current after 1 ms	≤ 10 A		no	
Primary fusing	10 A			16 A
Output				
Output voltage SELV	24 V DC, + 3 –1 %	24 V DC, + 3 –1 %	24 V DC, ± 1 %; 22...28 adjustable	
Output current	3 A (60 °C); 3.5 A (40 °C)	5 A (60 °C); 6 A (40 °C)	10 A (60 °C); 12 A (40 °C)	20 A (60 °C); 24 A (40 °C)
Efficiency	84 %	85 %	89 %	90 %
Mains failure bridging	≥ 30 ms (220 V DC)		≥ 10 ms (245 V DC)	≥ 15 ms (245 V DC)
Ripple; Spikes	≤ 20 mV eff; ≤ 100 mV ss			
Protection	short-circuit and overload protected, switch off at phase failure, pre-warning and switching off when overloaded ¹⁾ , alarm signal with relay contact ¹⁾			
Status indicator	green LED in operation, red LED shut down ¹⁾ , yellow LED pre-warning of overloaded or high temperature ¹⁾			
Parallel usage/ serial usage	no/yes		yes/yes	
Alarm output ^{1) 2)}	electr. relay max. 60 V DC/ 0.2 A, collective alarm for all faults and pre-warnings, quit via green reset button			
Test stop button ¹⁾	for test purposes, the secondary voltage can be switched off short term with the test stop button			
General data				
Standards	EN 60950-1, EN 61204-3, EN 55022 B			
Temperature range	0...+60 °C			
Relative humidity	30...90 %, no condensation			
Mounting method	DIN-rail mounting TH35 (EN 60715), additional plate for screw mounting Art.-No. 89500			

Dimension drawing (mm)



	H x W x D	Weight
3 A	132 x 75 x 71	0.6 kg
5 A	132 x 110 x 72	0.8 kg
10 A	132 x 198 x 101	1.7 kg
20 A	132 x 243 x 123	2.5 kg

Notes

- ¹⁾ Units from 10 A onwards. Other versions on request.
²⁾ Units decoupling through diode block at parallel usage.

CONVERTERS/RECTIFIER MODULES

Rectifier modules single-phase

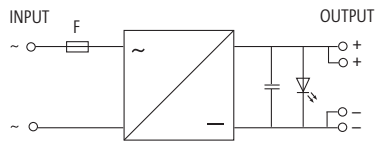
NG 2
max. 2.6 A

NG 5
max. 5 A

NG 10
max. 10 A



Circuit diagram



Ordering data		Art.-No.	Art.-No.	Art.-No.
	Output rating			
24 V DC/ 2.6 A	62 W	85700		
24 V DC/ 5 A	120 W		85710	
24 V DC/ 10 A	240 W			85730

Input				
Input voltage	max. 41 V AC		max. 29 V AC	
Input current	equals output current			
Frequency	50/60 Hz (or extra using for DC)			
Input fuse	3.15 A T (5 x 20 mm)	8 A T (5 x 20 mm)	16 A T (5 x 20 mm)	

Output				
Output voltage	24 V DC SELV (U_E approx. 21 V AC)			
Max. output current	2.6/ ¹⁾ 1.8 A	5/ ¹⁾ 4 A	10 A	
Ripple	≤ 5 % eff			
Output fuse	-			
Output filter	smoothed with smoothing capacitor and LED			

General data				
Temperature range	-20...+60 °C			
Mounting method	DIN-rail mounting TH35 (EN 60715)			
Weight	0.2 kg		0.8 kg	
Dimensions	H x W x D	86 x 45 x 65 mm	90 x 67.5 x 81 mm	90 x 90 x 135 mm

Dimension drawing				

Notes				
1) Max. current shown at $T_U = 60$ °C				

Converters/Rectifier modules

NOTES

