

General

Requirements for current supply in automation, machine, and process control have continuously increased over the past years. Function safety of electrical control, as well as safe operation of automated systems are top priority.

Precisely defined supply levels still cause problems when put into practice. Voltage and load deviations reduce product lifetime and can lead into downtime. Therefore it is necessary to use a power supply unit.

Working method

The heart of a primary switch mode supply is the transformer. The primary voltage will be equal, smooth and separated with high frequency. The high frequency voltage will be transformed into a low secondary voltage and be electronically stabilized by using a transformer. The major advantage of this unit is a high efficiency and its compact, low weight, size.

Advantage

- less ripple
- exact output voltage
- integrated short-circuit protection
- galvanical separation of input and output voltage
- minimum space
- easy mounting
- mains failure bridging
- high efficiency
- wide voltage input
- less weight

Serial integrated UPS-function

With the addition of a few additional components, the MPS of 10 A can build a power supply up to 24 V DC that will be free of interruptions. A number of technical features are required.



- Two maintenance free 12 V lead acid batteries provide the power.
- An under voltage protection relay prevents deep discharge.
- A battery fuse monitors the short-circuit and is also used to activate the battery after longer periods of inactivity.

All components are in parallel use – the transfer from power supply units into battery usage is without interruption. Through this it is possible to guarantee a safe power supply.

Valid for units, which don't meet the EN 61000-3-2 guideline.

Attention

This unit was designed for application in industrial environment (closed energy networks) and do not fulfill the requirements of the EN61000-3-2: 1995 + A1 + A2 + A14/2000 regarding harmonic.

The power supply may only be connected to public energy networks

- If the total measured power is greater than 1 kW
- If the total input current per conductor exceeds 16 A
- If the measured power is under 75 W (in the future 50 W) and does not have loads for illumination.

Notice:

At parallel operation should be considered the sum of the individual power measurements

- If the unit is supplied with less than 220 V (neutral outgoing connection)

This restrictions are valid from January 1, 2001 in all european countries. Other countries can also make use of these.

Primary switch mode PIP- *Power* +

Designed for world-wide use, the MCS-B, MCS and MPS are units, which have all the important and required international approvals. All switch modes have an additional wide voltage input to meet the required security extra low voltage (SELV).

MCS-B, the new Basic Line



Very small and up to 2.5 A

Fibre optic ring indicator for MCS-B units up to 2.5 A guarantee a clear operation.

Taking off the terminals at the input and output make wiring possible.

Easy mounting with safe distance from 5 A onwards

Mounting will be easy with the new hat DIN-rail mounting. The integrated distance switching at the power supply unit guarantee the necessary distance to the components next to it.

Save up to 50 % space

Bookform reduces surface up to 50 %.

MCS



Save up to 50 % space

Bookform reduces surface up to 50 %.

Optional switch off mode

Automatic shut-off can be individually chosen between re-start or definite shutoff.

Power Factor Correction (PFC)

To meet EN guideline regarding pre-defined limits.

Up to 20 % more rating

Units can be operated with an up to 20 % higher output rating at temperature range of 40 °C or lower.

MPS



Flat book form

For installation in control panels with a limited depth.

Remote monitoring

By using integrated potential free alarm contact in power supply.

Secure supply voltage

In a combination with batteries mains failure can be bridged with an integrated interruption free power supply function.

Quick and detail orientated diagnosis is possible through clearly arranged triple status indicator.

Teststop/Restart Button

For switching supply voltage on/off during operation.

Up to 20 % more rating

Units can be operated with an up to 20 % higher output rating at temperature ranges of 40 °C or lower.

Primary switch mode



MCS-B

Primary switch mode power supply for basic function. The units are touch protected, overload and short-circuit protected. DIN-rail mountable, small units for limited space requirements.

Input voltage: 90...265 V AC
 Output voltage: 24 V DC, 4...6 V DC, 12...15 V DC SELV
 Output current: 0.6/1/1.3/2.5/3/5/7.5/10 A
 Temperature range: 0...55 °C, from 40 °C de-rating

from page 4.5.4



MCS with and without PFC (EN 61000-3-2)

Primary switch mode power supply for demanding applications. The units are touch protected, overload and short-circuit protected. DIN-rail mountable, small units for limited space requirements.

Input voltage: 90...265 V AC
 Output voltage: 24 V DC SELV, 24...28 V DC adjustable
 Output current: 1.25/2.5/3/5/10/20 A
 Temperature range: 0...60 °C, from 40 °C de-rating
 For industrial use is also available a version without PFC

from page 4.5.7



MPS

Primary switch mode power supply for demanding applications and integrated UPS function. The units are touch protected, overload and short-circuit protected. DIN-rail mountable.

Input voltage: 110, 230 V AC
 Output voltage: 24 V DC SELV, 22...28 V DC adjustable
 Output current: 3/5/10/20 A
 Temperature range: 0...60 °C, at < 40 % 20 % more power

from page 4.5.13



MCS-A

Primary switch mode power supply for AS-Interface systems.

The units are touch protected, short-circuit and overload protected. DIN-rail mountable, less surface usage.

Input voltage: 95...265 V AC
 Output voltage: 30.5 V DC SELV
 Output current: 4 A with or without earth circuit protection (EFD)
 Temperature range: 0...55 °C, from 40 °C de-rating

from page 4.5.17



MASI

Primary switch mode power supply for the AS-Interface network.

The units are touch protected under IP20.

Input voltage: 115, 230 V AC
 Output voltage: 30.5 V DC
 Output current: 2.8 A
 Temperature range: -10...60 °C

page 4.5.16

Primary switch mode – single-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP-*Power* ⁺

MCS-B

Input voltage 95...265 V AC



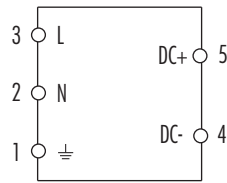
MCS-B

Input voltage 90...265 V AC

MCS-B

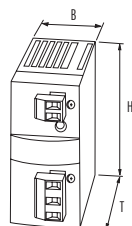
Input voltage 95...265 V AC

Circuit diagram



Ordering data			Art.-No.	Art.-No.	Art.-No.
		Output rating			
5 V DC/ 3 A	15 W		85371		
12 V DC/ 1 A	12 W			85372	
12 V DC/ 2.5 A	30 W				85373
Input					
Input voltage			95...265 V AC; 110...300 V DC	90...265 V AC; 110...300 V DC	95...265 V AC; 110...300 V DC
Input current			0.3 A (115 V AC); 0.2 A (230 V AC)	0.33 A (100 V AC); 0.16 A (230 V AC)	0.56 A (115 V AC); 0.31 A (230 V AC)
Inrush			< 15 A	< 20 A	
Primary fusing			max. 10 A		
Frequency			50/60 Hz		
Output					
Output voltage			5 V DC SELV, ± 1 %, 4.2...6 V adjustable	12 V DC SELV, ± 1 %, 12...15 V adjustable	
Norm. output current			3 A (+40 °C), 2.5 A (+55 °C)	1 A (+50 °C), 0.8 A (+60 °C)	2.5 A (+40 °C); 2.1 A (+55 °C)
Efficiency			0.8	0.77	0.82
Mains failure bridging			> 30 ms (115 V AC), 180 ms (230 V AC)	> 20 ms (115 V AC), >150 ms (230 V AC)	> 20 ms (115 V AC), > 110 ms (230 V AC)
Ripple			< 20 mV eff	< 50 mV eff	
Spikes			< 120 mV ss	< 300 mV ss	< 120 mV ss
Protection			short-circuit and overload protected		
Status indicator			green LED for output voltage		
Parallel usage/Serial usage			no/yes		
General data					
Guidelines			EN 60950-1, EN 61204-3, EN 55022 B, EN 61000-3-2		
Temperature range			0...+40 °C, up to 55 °C de-rating	0...+50 °C	0...+40 °C, up to 55 °C de-rating
Relative humidity			5...95 %, no condensation		
Mounting method			DIN-rail mounting to EN 60715 (TH35)		
Weight			0.16 kg	0.13 kg	0.16 kg
Dimensions H x B x T x TA ¹⁾			76 x 38 x 80 x 7.5 ¹⁾ mm		
Dimension drawing					

Dimension drawing



¹⁾ TA = terminal depth

Notes

¹⁾ MCS-B primary switch mode meets EN 61000-3-2 guideline.
Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP- *Power* ⁺

Approvals:

MCS-B

Input voltage 90...265 V AC



MCS-B

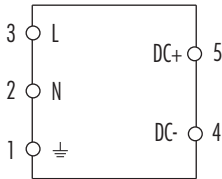
Input voltage 90...265 V AC

MCS-B

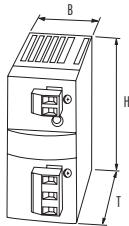
Input voltage 95...265 V AC



Circuit diagram



Ordering data		Art.-No.	Art.-No.	Art.-No.
	Output rating			
24 V DC/ 0.6 A	15 W	85160		
24 V DC/ 1.3 A	30 W		85161	
24 V DC/ 2.5 A	60 W			85162
Input				
Input voltage		90...265 V AC; 110...300 V DC		95...265 V AC
Input current		0.3 A (100 V AC); 0.2 A (230 V AC)	0.65 A (100 V AC); 0.37 A (230 V AC)	1.04 A (110 V AC); 0.63 A (230 V AC)
Inrush		< 20 A		
Primary fusing		max. 10 A		
Frequency		50/60 Hz		
Output				
Output voltage		24 V DC SELV, - 1 %/+ 3 %		
Nom. output current		0.6 A (+50 °C), 0.5 A (+60 °C)	1.3 A (+60 °C, U _{in} > 170 V AC)	2.5 A (+40 °C); 2.0 A (+55 °C)
Efficiency		0.81 (100 V AC); 0.83 (230 V AC)	0.82	0.85 (110 V AC); 0.87 (230 V AC)
Mains failure bridging		> 25 ms (100 V AC),	> 15 ms (100 V AC), > 100 ms (230 V AC)	> 15 ms (110 V AC), > 80 ms (230 V AC)
Ripple		< 50 mV eff		
Spikes		< 350 mV ss	< 120 mV ss	
Protection		short-circuit and overload protected		
Status indicator		green LED at output voltage		
Parallel usage/Serial usage		no/yes		
General data				
Guidelines		EN 60950-1, EN 61204-3, EN 55022 B, EN 61000-3-2		
Temperature range		0...+50 °C, up to +60 °C de-rating		0...+40 °C, up to +55 °C de-rating
Relative humidity		5...95 %, no condensation		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Weight		0.11 kg	0.16 kg	0.23 kg
Dimensions H x B x T x TA ¹⁾		76 x 38 x 80 x 7.5 ¹⁾ mm		76 x 38 x 100.5 x 7.5 ¹⁾ mm
Dimension drawing				



¹⁾ TA = terminal depth

Notes

MCS-B primary switch mode meets EN 61000-3-2 guideline.
Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP-*Power* ⁺

Approvals:



MCS-B

Input voltage 100...265 V AC



MCS-B

Input voltage 100...265 V AC

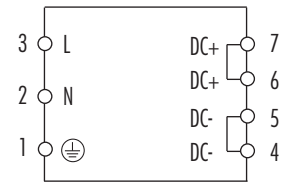
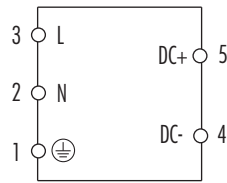


MCS-B

Input voltage 100...265 V AC

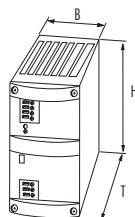


Circuit diagram



Ordering data		Art.-No.	Art.-No.	Art.-No.
	Output rating			
24 V DC/ 5 A	120 W	85163		
24 V DC/ 7.5 A	180 W		85164	
24 V DC/ 10 A	240 W			85165
Input				
Input voltage		100...265 V AC		
Input current		2 A (110 V AC); 1.16 A (230 V AC)	2.9 A (115 V AC); 1.6 A (230 V AC)	3.4 A (115 V AC); 2.2 A (230 V AC)
Inrush		< 30 A	< 37 A	< 40 A
Primary fusing		max. 10 A		max. 16 A
Frequency		50/60 Hz		
Output				
Output voltage		24 V DC SELV, - 1 %/+ 3 %		
Norm. output current		5 A (+40 °C), 4 A (+55 °C)	7.5 A (+40 °C), 6 A (+55 °C)	10 A (+40 °C); 8 A (+55 °C)
Efficiency		0.86 (110 V AC); 0.87 (230 V AC)	0.87 (115...230 V AC 24 V DC)	0.83 (115 V DC); 0.85 (230 V AC)
Mains failure bridging		> 10 ms (110 V AC), > 80 ms (230 V AC)	> 14 ms (115 V AC), > 80 ms (230 V AC)	> 15 ms (115 V AC), > 115 ms (230 V AC)
Ripple		< 20 mV eff		
Spikes		< 100 mV ss		
Protection		short-circuit and overload protected		
Status indicator		green LED at output voltage		
Parallel usage/Serial usage		no/yes		
General data				
Guidelines		EN 60950-1, EN 61204-3, EN 55011 A,		
Temperature range		0...+40 °C, up to +55 °C de-rating		
Relative humidity		5...95 %, no condensation		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Weight		0.54 kg	0.7 kg	1.0 kg
Dimensions	H x B x T	115 x 54 x 125 mm	115 x 54 x 145 mm	128 x 68 x 165 mm
Dimension drawing				

Dimension drawing



Notes

Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

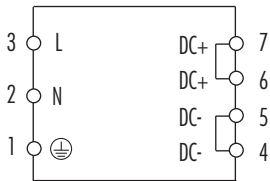
PIP- *Power* +

Approvals:

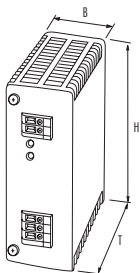
MCS
Input voltage 90...265 V AC



Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
12 V DC/ 5 A	60 W	85040	
5 V DC/ 6 A	30 W		85041
Input			
Input voltage		90...265 V AC, 110...300 V DC	
Input current		1.3 A (100 V AC)/0.6 A (240 V AC)	
Inrush		0.6 A (100 V AC)/0.3 A (240 V AC)	
Primary fusing		< 22 A	
Frequency		max. 10 A	
		50/60 Hz	
Output			
Output voltage		12 V DC, SELV ± 1 %; 10...15 V adjustable	
Nom. output current		5 V DC, SELV ± 1 %; 4...6 V adjustable	
Efficiency		5 A (55 °C); 5...6 A (45 °C)	
Mains failure bridging		0.85	
Ripple		0.8	
Spikes		> 70 ms (230 V AC), 10 ms (115 V AC)	
Protection		< 20 mV eff	
Status indicator		< 10 mV eff	
Parallel usage/Serial usage		< 200 mV ss	
		< 50 mV ss	
		short-circuit and overload protected	
		green LED at output voltage	
		no/yes	
General data			
Guidelines		EN 60950-1, EN 61204-3, EN 55022 B, EN 61000-3-2	
Temperature range		0...+55 °C	
Relative humidity		0...+60 °C	
Mounting method		5...95 %, no condensation	
Weight		DIN-rail mounting to EN 60715 (TH35)	
Dimensions		0.45 kg	
H x B x T		0.50 kg	
Dimension drawing		107.5 x 42 x 97.5 mm	



Notes
MCS primary switch mode meets EN 61000-3-2 guideline.
Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP- *Power* +

Approvals:  **UL** **US**
Listed

MCS

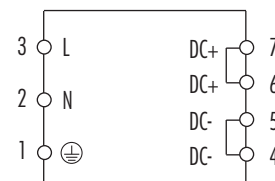
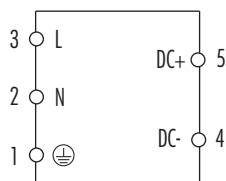
Input voltage 90...265 V AC



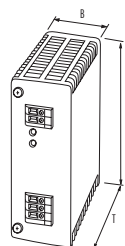
MCS with PFC

Input voltage 85...265 V AC

Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
24 V DC/ 2.5 A	60 W	85064	
24 V DC/ 3 A	72 W		85060
Input			
Input voltage	90...265 V AC; 110...300 V DC		85...265 V AC
Input current	1.3 A (100 V AC); 0.5 A (240 V AC)		0.82 A (115 V AC); 0.4 A (230 V AC)
Inrush	< 22 A		< 20 A
Primary fusing	max. 10 A		
Frequency	50/60 Hz		
Output			
Output voltage	24 V DC, SELV $\pm 1\%$; 20...30 V adjustable		24 V DC, SELV $\pm 1\%$; 24...28 V adjustable
Nom. output current	2.5 A (60 °C); 2.5...3 A (50 °C)		3 A (60 °C); 3.5 A (40 °C)
Efficiency	0.85		0.82 (230 V AC); 0.79 (115 V AC)
Mains failure bridging	> 70 ms (230 V AC), 10 ms typ (115 V AC)		> 40 ms (85...265 V AC)
Ripple	< 20 mV eff		
Spikes	< 100 mV ss		< 240 mV ss
Protection	short-circuit and overload protected		
Status indicator	green LED at output voltage		
Parallel usage/Serial usage	no/yes		
General data			
Guidelines	EN 60950-1, EN 61204-3, EN 55022 B, EN 61000-3-2		
Temperature range	0...+60 °C		
Relative humidity	5...95 %, no condensation		
Mounting method	DIN-rail mounting to EN 60715 (TH35)		
Weight	0.45 kg		0.79 kg
Dimensions	H x B x T	107.5 x 42 x 97.5 mm	134 x 46 x 104 mm
Dimension drawing			



Notes

MCS primary switch mode meets EN 61000-3-2 guideline.
Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP- *Power* +

Approvals:

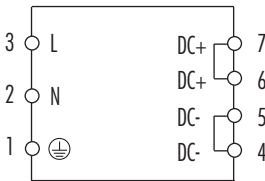
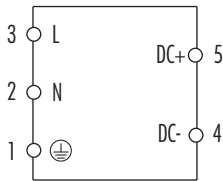


MCS with PFC

Input voltage 90...265 V AC



Circuit diagram



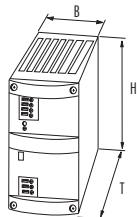
Ordering data		Art.-No.	Art.-No.	Art.-No.
	Output rating			
24 V DC/ 5 A	120 W	85061		
24 V DC/10 A	240 W		85062	
24 V DC/20 A	480 W			85063

Input				
Input voltage		90...265 V AC; 125...300 V DC		90...265 V AC; 130...300 V DC
Input current		1.4 A (100 V AC)/0.6 A (240 V AC)	2.7 A (100 V AC)/1.1 A (240 V AC)	5.5 A (100 V AC)/2.4 A (240 V AC)
Inrush		< 25 A		< 30 A
Primary fusing		max. 10 A		max. 16 A
Frequency		50/60 Hz		

Output				
Output voltage		24 V DC, SELV $\pm$ 1 %; 24...28 V adjustable		
Nom. output current		5 A (60 °C); 6 A (40 °C, 110...265 V AC)	10 A (60 °C); 12 A (40 °C, 110...265 V AC)	20 A (60 °C); 24 A (40 °C, 110...265 V AC)
Efficiency		0.83 (115 V AC)/0.87 (230 V AC)	0.88 (115 V AC)/0.9 (230 V AC)	
Mains failure bridging		> 18 ms	> 15 ms	> 18 ms
Ripple		< 20 mV eff		
Spikes	typical	80 mV ss	200 mV ss	250 mV ss
Protection		short-circuit and overload protected		
Status indicator		green LED at output voltage		
Choosable switch off mode		front sided bridging link (self activating re-start or definite shutoff)		
Parallel usage/Serial usage		yes/yes		

General data				
Guidelines		EN 60950-1, EN 61204-3, EN 55022 B, EN 61000-3-2		
Temperature range		0...+60 °C		
Relative humidity		5...95 %, no condensation		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		screw mount. M 4, 4 pieces 60 x 197 mm
Weight		0.75 kg	1.5 kg	2.7 kg
Dimensions	H x B x T	115 x 54 x 151 mm	127 x 68 x 204 mm	209 x 84 x 233 mm

Dimension drawing



Notes
MCS primary switch mode meets EN 61000-3-2 guideline. Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP-*Power*⁺

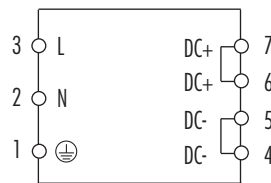
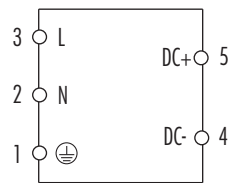
Approvals:  **UL**
Listed

MCS

Input voltage 95...132 V AC



Circuit diagram



Ordering data	Art.-No.	Art.-No.	Art.-No.
Output rating			
24 V DC/ 5 A	120 W	85084	
24 V DC/ 10 A	240 W		85086
24 V DC/ 20 A	480 W		85088

Input

Input voltage	95...132 V AC		
Input current	2.2 A (115 V AC)	4.2 A (115 V AC)	8.4 A (115 V AC)
Inrush	< 15 A	< 25 A	no
Primary fusing	max. 10 A		max. 16 A
Frequency	50/60 Hz		

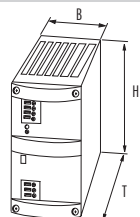
Output

Output voltage	24 V DC, SELV $\pm 1\%$; 24...28 V adjustable		
Nom. output current	5 A	10 A	20 A
Efficiency	0.84	0.9	
Mains failure bridging	> 20 ms (115 V AC)	> 15 ms (115 V AC)	> 20 ms (115 V AC)
Ripple	< 20 mV eff		
Spikes	typical	80 mV ss	200 mV ss
Protection	short-circuit and overload protected		
Status indicator	green LED at output voltage		
Choosable switch off mode	front sided bridging link (self activating re-start or definite shutoff)		
Parallel usage/Serial usage	yes/yes		

General data

Guidelines	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	0...+60 °C		
Relative humidity	5...95 %, no condensation		
Mounting method	DIN-rail mounting to EN 60715 (TH35)		
Weight	0.6 kg	1.2 kg	2.3 kg
Dimensions	H x B x T	115 x 54 x 125 mm	127 x 68 x 160 mm
			170 x 84 x 201 mm

Dimension drawing



Notes

Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

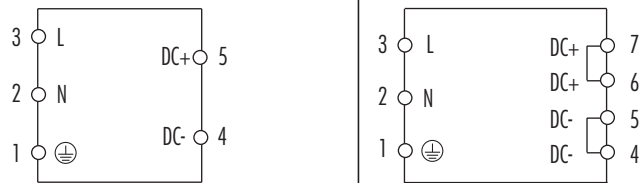
PIP- *Power* +

Approvals: cUL US Listed

MCS
Input voltage 185...265 V AC



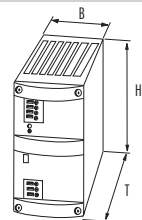
Circuit diagram



Ordering data		Art.-No.	Art.-No.	Art.-No.
	Output rating			
24 V DC/ 5 A	120 W	85083		
24 V DC/10 A	240 W		85085	
24 V DC/20 A	480 W			85087

Input				
Input voltage		185...265 V AC		
Input current		1.1 A (230 V AC)	2.1 A (230 V AC)	4.2 A (230 V AC)
Inrush		< 35 A	< 25 A	no
Primary fusing		max. 10 A		max. 16 A
Frequency		50/60 Hz		
Output				
Output voltage		24 V DC SELV, ± 1 %; 24...28 V adjustable		
Nom. output current		5 A	10 A	20 A
Efficiency		0.84	0.9	
Mains failure bridging		> 20 ms (230 V AC)	> 15 ms (230 V AC)	> 20 ms (230 V AC)
Ripple		< 20 mV eff		
Spikes	typical	80 mV ss	200 mV ss	250 mV ss
Protection		short-circuit and overload protected		
Status indicator		green LED at output voltage		
Choosable switch off mode		front sided bridging link (self activating re-start or definite shutoff)		
Parallel usage/Serial usage		yes/yes		
General data				
Guidelines		EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range		0...+60 °C		
Relative humidity		5...95 %, no condensation		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Weight		0.6 kg	1.2 kg	2.3 kg
Dimensions	H x B x T	115 x 54 x 125 mm	127 x 68 x 160 mm	170 x 84 x 201 mm

Dimension drawing



Notes

Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase

Single-/2-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

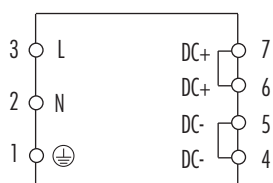
PIP-Power +

MCS

Input voltage 340...460 V AC



Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
24 V DC/ 5 A	120 W	857725	
24 V DC/10 A	240 W		857726

Input

Input voltage	340...460 V AC		
Input current	0.65 A (400 V AC)	1.2 A (400 V AC)	
Inrush	< 22 A		
Primary fusing	max. 10 A		
Frequency	50/60 Hz		

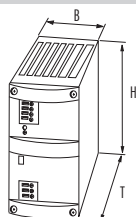
Output

Output voltage	24 V DC, SELV $\pm 1\%$; 24...28 V adjustable		
Nom. output current	5 A	10 A	
Efficiency	0.85	0.87	
Mains failure bridging	> 10 ms (400 V AC)	> 12 ms (400 V AC)	
Ripple	< 20 mV eff		
Spikes	typical	100 mV ss	200 mV ss
Protection	short-circuit and overload protected		
Status indicator	green LED at output voltage		
Choosable switch off mode	front sided bridging link (self activating re-start or definite shutoff)		
Parallel usage/Serial usage	yes/yes		

General data

Guidelines	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	0...+60 °C		
Relative humidity	5...95 %, no condensation		
Mounting method	DIN-rail mounting to EN 60715 (TH35)		
Weight	0.85 kg	1.2 kg	
Dimensions	H x B x T	127 x 68 x 140 mm	127 x 68 x 160 mm

Dimension drawing



Notes

Mounting adapter for side mounting see page 4.9.2

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Wide voltage input

Touch protected to EN 60529 (IP20)

PIP-*Power* +

Approvals:



MPS 3

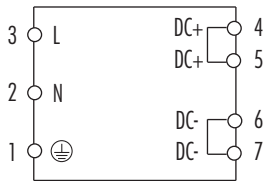
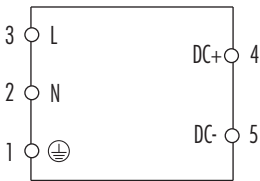
Input voltage 95...265 V AC



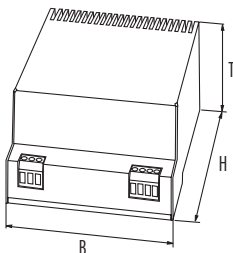
MPS 5

Input voltage 90...265 V AC

Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
24 V DC/3 A	72 W	85051	
24 V DC/5 A	120 W		85053
Input			
Input voltage	95...265 V AC		90...265 V AC
Input current	1.5 A (115 V AC); 0.75 A (230 V AC)		1.9 A (115 V AC); 0.95 A (230 V AC)
Inrush	< 20 A		< 10 A
Primary fusing	max. 10 A		
Frequency	50/60 Hz		
Output			
Output voltage	24 V DC, SELV + 3 % / -1 %		
Nom. output current	3 A (60 °C); 3.5 A (40 °C)		5 A (60 °C); 6 A (40 °C)
Efficiency	0.84		0.85
Mains failure bridging	> 8.3 ms (115 V AC); > 80 ms (230 V AC)		> 10 ms (115 V AC); > 80 ms (230 V AC)
Ripple	< 20 mV eff		
Spikes	< 100 mV ss		
Protection	short-circuit and overload protected, automatic re-start U < 8 V		
Status indicator	green LED at output voltage > 22 V DC		
Parallel usage/Serial usage	no/yes		
General data			
Guidelines	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	0...+60 °C		
Relative humidity	5...95 %, no condensation		
Mounting method	DIN-rail mounting to EN 60715 (TH35), additional plate for screw mounting Art.-No. 89500		
Weight	0.6 kg		0.8 kg
Dimensions	H x B x T	132 x 75 x 71 mm	132 x 110 x 72 mm
Dimension drawing			



Notes

Primary switch mode – single-phase

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

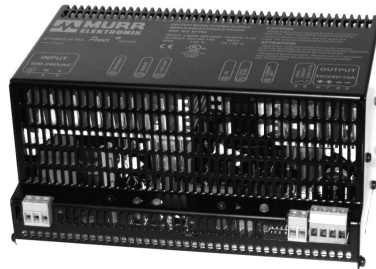
PIP- *Power* ⁺

Approvals:



MPS 10

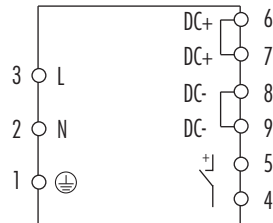
Input voltage 95...132 V AC



MPS 20

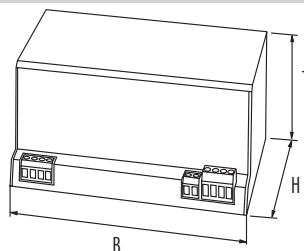
Input voltage 95...132 V AC

Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
24 V DC/10 A	240 W	85054	
24 V DC/20 A	480 W		85056
Input			
Input voltage	95...132 V AC		
Input current	4.2 A		8 A
Inrush	no		
Primary fusing	max. 10 A		max. 16 A
Frequency	50/60 Hz		
Output			
Output voltage	24 V DC, SELV ± 1 %; 22...28 V adjustable		
Nom. output current	10 A (60 °C); 12 A (40 °C)		20 A (60 °C); 24 A (40 °C)
Efficiency	0.9		
Mains failure bridging	> 10 ms (115 V AC)		
Ripple; Spikes	< 20 mV eff; < 100 mV ss		
Protection	short-circuit and overload protected, pre-warning and switching off when overheated or overloaded, signaling over alarm output		
Status indicator	green LED in operation, red LED switched off, yellow LED pre-warning of overload of high temperature		
Parallel usage/Serial usage	yes/yes		
Alarm output ¹⁾	electronic relay max. 60 V DC/0.2 A, collective alarm for all faults and pre-warnings, green reset button for resigning		
Test stop-button	for test purposes, the secondary voltage can be switched off short term with the test stop button		
General data			
Guidelines	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	0...+60 °C		
Mounting method	DIN-rail mounting to EN 60715 (TH35), additional plate for screw mounting Art.-No. 89500		
Relative humidity	5...95 %, no condensation		
Weight	1.7 kg		2.5 kg
Dimensions	H x B x T	132 x 198 x 97 mm	132 x 243 x 123 mm
Dimension drawing			

Dimension drawing



Notes

¹⁾ If units used in parallel decoupling of units via diode block. UPS components see page 4.9.3

Primary switch mode – single-phase



Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

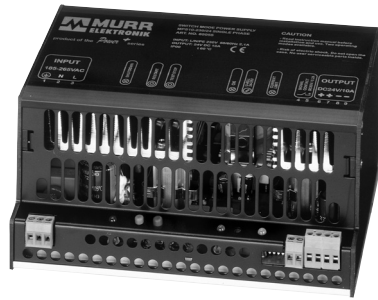
PIP- *Power* +

Approvals:



MPS 10

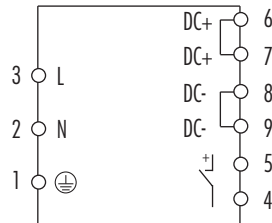
Input voltage 185...265 V AC



MPS 20

Input voltage 185...265 V AC

Circuit diagram



Ordering data

	Output rating	Art.-No.	Art.-No.
24 V DC/10 A	240 W	85055	
24 V DC/20 A	480 W		85057

Input

Input voltage	185...265 V AC		
Input current	2.1 A	4.0 A	
Inrush	no		
Primary fusing	max. 10 A	max. 16 A	
Frequency	50/60 Hz		

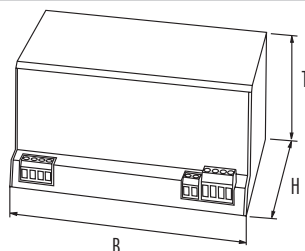
Output

Output voltage	24 V DC, SELV $\pm 1\%$; 22...28 V adjustable		
Nom. output current	10 A (60 °C); 12 A (40 °C)	20 A (60 °C); 24 A (40 °C)	
Efficiency	0.9		
Mains failure bridging	> 10 ms		
Ripple; Spikes	< 20 mV eff; < 100 mV ss		
Protection	short-circuit and overload protected, pre-warning and switching off when overheated or overloaded, signaling over alarm output		
Status indicator	green LED in operation, red LED switched off, yellow LED, yellow pre-warning of overload of high temperature		
Parallel usage/Serial usage	yes/yes		
Alarm output ¹⁾	electronic relay max. 60 V DC/0.2 A, collective alarm for all faults and pre-warnings, green reset button for resigning		
Test stop-button	for test purposes, the secondary voltage can be switched off short term with the test stop button		

General data

Guidelines	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	0...+60 °C		
Relative humidity	5...95 %, no condensation		
Mounting method	DIN-rail mounting to EN 60715 (TH35), additional plate for screw mounting Art.-No. 89500		
Weight	1.7 kg	2.5 kg	
Dimensions H x B x T	132 x 198 x 97 mm	132 x 243 x 123 mm	

Dimension drawing



Notes

¹⁾ If units used in parallel decoupling of units via diode block. UPS components see page 4.9.3

Primary switch mode – single-phase

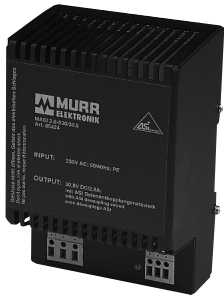


Supply voltage for
AS-Interface Bus

Touch protected to EN 60529
(IP20)

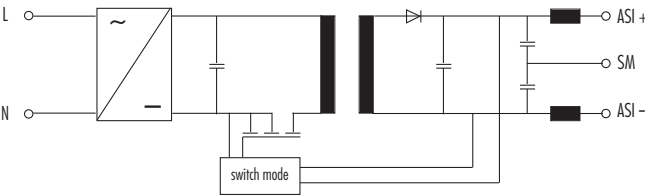
MA SI - 2.8
Input voltage 115 V AC

MA SI - 2.8
Input voltage 230 V AC



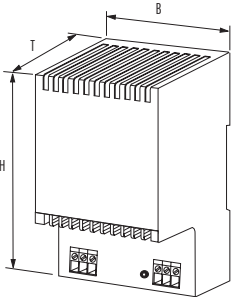
Approvals:

Circuit diagram



Ordering data		Art.-No.	Art.-No.
	Output rating		
30.5 V DC/2.8 A	85.4 W	85425	85424
Input			
Input voltage	115 V AC	230 V AC	
Input current	1.3 A	0.8 A	
Inrush	< 14 A	< 20 A	
Primary fusing	max. 10 A T		
Frequency	50/60 Hz		
Output			
Output voltage	30.5 V DC SELV ± 3 %		
Max. output current	2.8 A		
Efficiency	0.85		
Mains failure bridging	> 30 ms (115 V AC)	> 30 ms (230 V AC)	
Ripple	< 50 mVss		
Protection	short-circuit and overload protected		
Status indicator	green LED at output voltage		
Output filter	filter to AS-Interface specification		
General data			
Norm	EN 60950-1, EN 61204-3, EN 55022 B		
Temperature range	-10...+60 °C		
Mounting method	DIN-rail mounting to EN60715 (TH35)		
AS-Interface	unit meets AS-Interface specification for power supplies (PELV)		
Weight	0.71 kg		
Dimensions H x B x T	153 x 103 x 70 mm		

Dimension drawing/Fixing centers



Notes

MA SI - 2.8 primary switch mode meets EN 61000-3-2 guideline.

Primary switch mode – single-phase

Supply voltage for
AS-Interface Bus

Touch protected to EN 60529
(IP20)

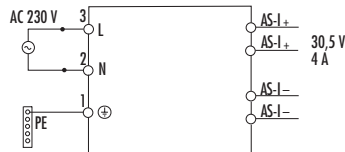
Approvals:



Circuit diagram

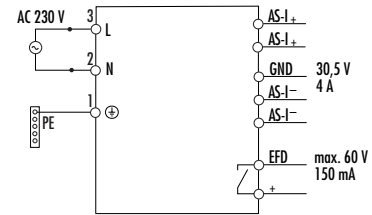
MCS-A 4

Input voltage 95...265 V AC



MCS-A 4 EFD

Input voltage 95...265 V AC



Ordering data

Art.-No.

Art.-No.

Output rating
30.5 V DC/4 A 122 W

85381

85382

Input

Input voltage 95...265 V AC
Input current 2.1 A at 110 V AC
Inrush ≤ 35 A at 230 V AC
Primary fusing max. 10 A T
Frequency 50/60 Hz

Output

Output voltage 30.5 V DC SELV $\pm 2\%$
Max. output current 4.0 A (40 °C) ... 3.4 A (55 °C)
Efficiency 0.85/240 V AC
Mains failure bridging > 14 ms typical/110 V AC
Ripple < 20 mV eff
Protection short-circuit and overload protected
Status indicator green LED at output voltage
Output filter filter to AS-Interface specification
Earth field monitoring (EFD) no

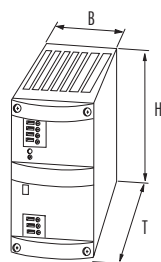
yes

General data

Guidelines EN 60950-1, EN 61204-3, EN 55022 B
Temperature range 0...+40 °C
Mounting method DIN-rail mounting to EN60715 (TH35)
AS-Interface unit appropriates AS-Interface specification for power supply (PELV)
Weight 0.6 kg
Dimensions H x B x T x TA¹⁾ 115 x 54 x 147 mm

115 x 54 x 147 x 16¹⁾ mm

Dimension drawing/Fixing centers



¹⁾ TA = terminal depth

Notes

Mounting adapter for side mounting see page 4.9.2