

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 4.5.5



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 4.5.16



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 4.5.17

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

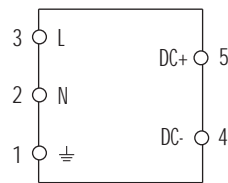
Input voltage 90...265 V AC

MCS-B

Input voltage 95...265 V AC



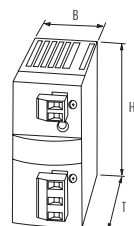
Circuit diagram



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, $\pm 1\%$, 4.2...6 V adjustable	12 V DC SELV, $\pm 1\%$, 12...15 V adjustable	
Nom. 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



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

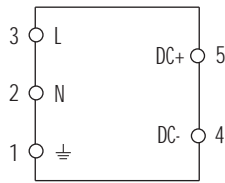
Input voltage 90...265 V AC

MCS-B

Input voltage 95...265 V AC



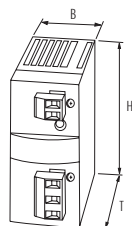
Circuit diagram



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: US Listed

MCS-B
Input voltage 100...265 V AC



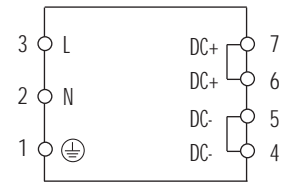
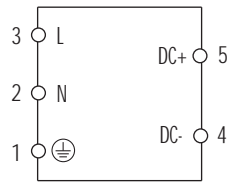
MCS-B
Input voltage 100...265 V AC



MCS-B
Input voltage 100...265 V AC



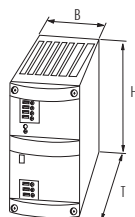
Circuit diagram



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 %		
Nom. 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



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:

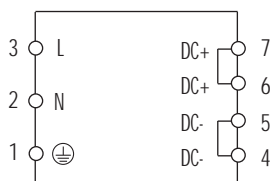


MCS

Input voltage 90...265 V AC



Circuit diagram



Ordering data

Output rating	Art.-No.	Art.-No.
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)	0.6 A (100 V AC)/0.3 A (240 V AC)
Inrush	< 22 A	
Primary fusing	max. 10 A	
Frequency	50/60 Hz	

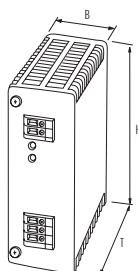
Output

Output voltage	12 V DC, SELV $\pm 1\%$; 10...15 V adjustable	5 V DC, SELV $\pm 1\%$; 4...6 V adjustable
Nom. output current	5 A (55 °C); 5...6 A (45 °C)	6 A (60 °C); 6...7.5 A (50 °C)
Efficiency	0.85	
Mains failure bridging	> 70 ms (230 V AC), 10 ms (115 V AC)	> 90 ms (230 V AC), 12 ms (115 V AC)
Ripple	< 20 mV eff	< 10 mV eff
Spikes	< 200 mV ss	< 50 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...+55 °C	0...+60 °C
Relative humidity	5...95 %, no condensation	
Mounting method	DIN-rail mounting to EN 60715 (TH35)	
Weight	0.45 kg	0.50 kg
Dimensions	H x B x T	107.5 x 42 x 97.5 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: Listed

MCS

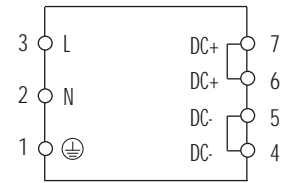
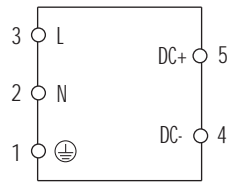
Input voltage 90...265 V AC



MCS with PFC

Input voltage 85...265 V AC

Circuit diagram



Ordering data

	Output rating	Art.-No.	Art.-No.
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	

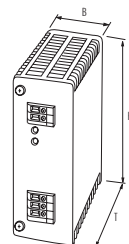
Output

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* +

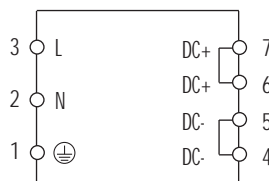
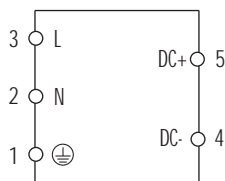
Approvals:

MCS with PFC

Input voltage 90...265 V AC



Circuit diagram



Ordering data

Output rating	Art.-No.	Art.-No.	Art.-No.
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)
Inrush	< 25 A	< 30 A
Primary fusing	max. 10 A	max. 16 A
Frequency	50/60 Hz	

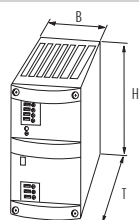
Output

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 \square 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*⁺

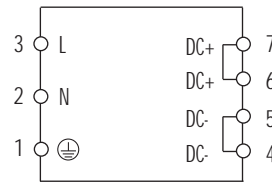
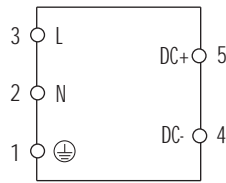
Approvals: Listed

MCS

Input voltage 95...132 V AC



Circuit diagram



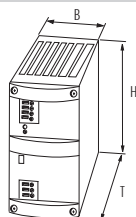
Ordering data	Art.-No.	Art.-No.	Art.-No.
Output rating			
24 V DC/ 5 A	120 W	85084	
24 V DC/ 10 A	240 W		85086
24 V DC/ 20 A	480 W		85088

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 ± 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	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

Stabilized output voltage

Short-circuit and overload protected

Touch protected to EN 60529 (IP20)

PIP- *Power +*

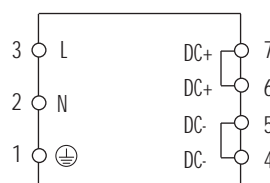
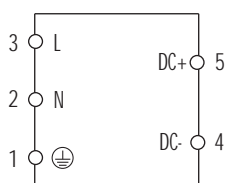
Approvals:

MCS

Input voltage 185...265 V AC



Circuit diagram



Ordering data

Output rating	Art.-No.	Art.-No.	Art.-No.
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		

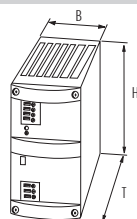
Output

Output voltage	24 V DC SELV, $\pm 1\%$; 24...28 V adjustable		
Nom. output current	5 A	10 A	20 A
Efficiency	0.84	0.9	
Mains failure bridging	> 20 ms (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)

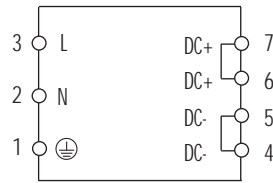
PIP-*Power* +

MCS

Input voltage 340...460 V AC



Circuit diagram



Ordering data

	Output rating	Art.-No.	Art.-No.
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		

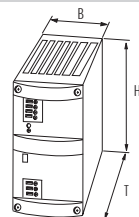
Output

Output voltage	24 V DC, SELV ± 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

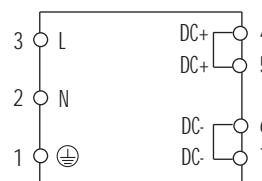
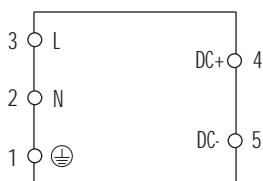
Input voltage 95...265 V AC



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
24 V DC/5 A	120 W

85051

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	

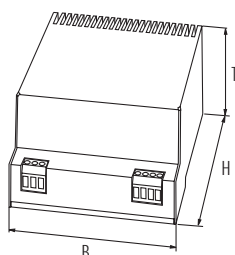
Output

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 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:

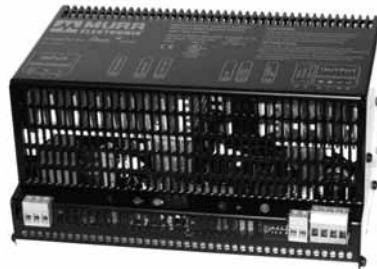


MPS 10

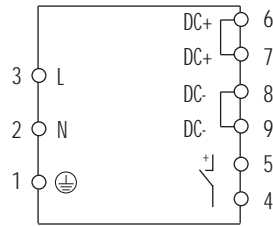
Input voltage 95...132 V AC

MPS 20

Input voltage 95...132 V AC



Circuit diagram



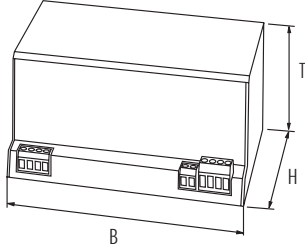
Ordering data	Art.-No.	Art.-No.
Output rating		
24 V DC/10 A	240 W	85054
24 V DC/20 A	480 W	85056

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 $\pm 1\%$; 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 (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



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

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

MPS 10

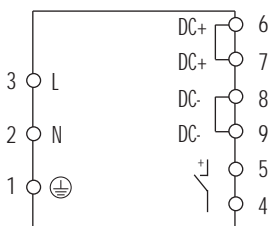
Input voltage 185...265 V AC

MPS 20

Input voltage 185...265 V AC



Circuit diagram

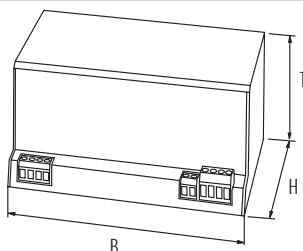


Ordering data	Art.-No.	Art.-No.
Output rating		
24 V DC/10 A	240 W	85055
24 V DC/20 A	480 W	85057

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

Primary switch mode – single-phase

Supply voltage for AS-Interface Bus

Touch protected to EN 60529 (IP20)

MASI - 2.8
Input voltage 115 V AC

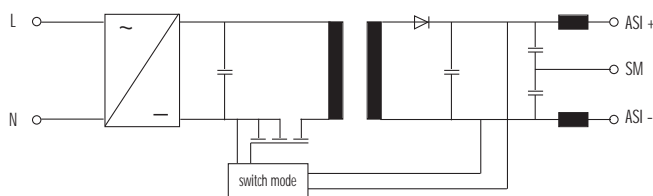
MASI - 2.8
Input voltage 230 V AC



Approvals:



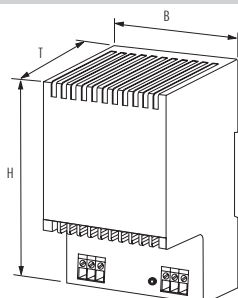
Circuit diagram



Ordering data	Art.-No.	Art.-No.
Output rating 30.5 V DC/2.8 A 85.4 W	85425	85424

Input	115 V AC	230 V AC
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	30.5 V DC SELV ± 3 %	
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	EN 60950-1, EN 61204-3, EN 55022 B	
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
MASI - 2.8 primary switch mode meets EN 61000-3-2 guideline.

Primary switch mode – single-phase

Primary switch mode – single-phase

Supply voltage for AS-Interface Bus

Touch protected to EN 60529 (IP20)

Approvals:



MCS-A 4

Input voltage 95...265 V AC

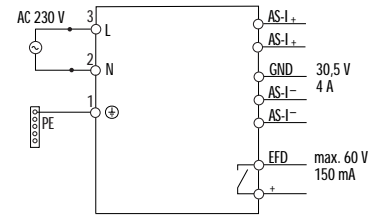
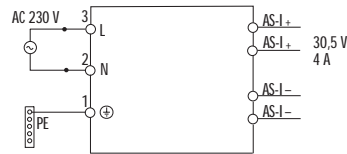


MCS-A 4 EFD

Input voltage 95...265 V AC



Circuit diagram



Ordering data

Output rating
30.5 V DC/4 A 122 W

Art.-No.

85381

Art.-No.

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

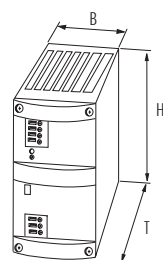
yes

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