PULS

DIN-Rail Power Supplies
MiniLine 15-100 Watt

2008

MiniLine

Product Quality & Easy to Use

The MiniLine series covers the lower power demands in the range from 15 – 100 W. The units are highly efficient, compact, can be installed in seconds and are extremely reliable.

A Wide Range of Products

Choose the right unit for your requirements from 22 different MiniLine power supplies. If it needs to be completely reliable, redundant systems can also be built with the diode module.

Installs in Seconds

The user-friendly design and the quick-connect spring-clamp terminals which are easily accessible from the front allow installation in seconds without the aid of tools. Any necessary adjustments are made by means of simple jumpers.

Small & Compact

Thanks to innovative technology, high efficiency and low power dissipation, MiniLine units need much less space than comparable commercially available units.

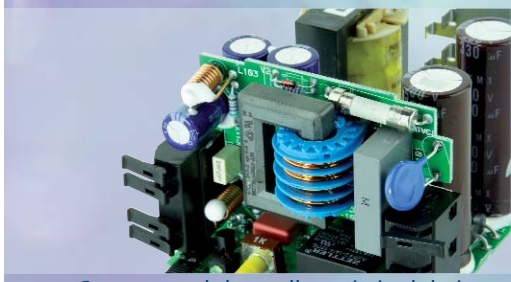
Developed for Flexibility

All units are suitable for use in industrial as well as office and residential areas. The comprehensive approvals package allows for trouble-free, universal use. All units bear the UL mark and many units are additionally approved to GL, ABS, CSA, SEMI-F47, NEC Class 2 or Class 1 Div 2.

Integrated Reliability

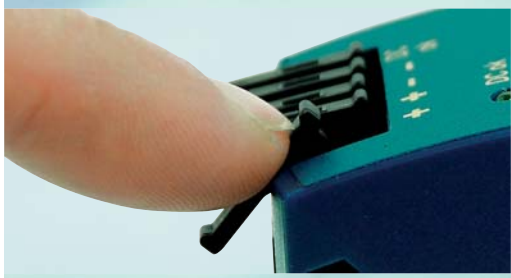
Trouble-free operation is guaranteed by the robust plastic housing, the vibration-resistant terminals, the transient filtered input with a overload and short circuit protected output. A three year warranty is provided for a long service life and all units have above-average MTBF values.

Jumper for setting output voltage range



Compact and thermally optimised design

Load sharing jumper for parallel use



Quick-connect spring-clamp terminals

Connections for large wire sizes

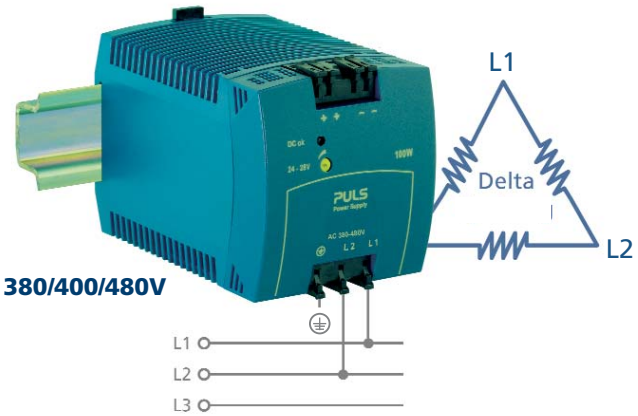
Easy mount to the DIN-Rail

1-Phase Power Supplies 15-100W

- Suitable for all single-phase voltages around the globe
- Output voltages between 5 and 56V
- Full output power from –10°C to +60°C
- Quick-connect spring-clamp terminals (except ML15)
- Large cross-sections up to 2.5mm² (ML15 up to 4mm²)
- Robust overload behaviour
- Universal approvals package

2-Phase Power Supplies 90-100W

- Supplies 24V from a 380-480V 3-phase voltage system
- Requires only two-phase, no neutral conductor necessary
- Full output power from –10°C to +60°C
- Large cross-sections up to 2.5mm²
- Quick-connect spring-clamp terminals
- Robust overload behaviour
- Universal approvals package



380-480V Input		ML100	
		24V 3.75A	24V 4.2A
Output		**24 - 28V**	**24 - 28V**
Output Voltage		3.75 - 3.2A	4.2 - 3.6A
Output Power		90W	100W
Ripple & Noise		<50mVpp	<50mVpp
AC Input		380-480Vac ±15%	380-480Vac ±15%
Inrush Current [1]	400/480Vac	30/36A	30/36A
Buffer Time [1]	400/480Vac	52/93ms	48/85ms
MTBF [2]	400/480Vac	1.6/1.5 Mio h	1.6/1.5 Mio h
Efficiency [1]	400/480Vac	89.5/89.0%	89.5/89.0%
Power Losses [1]	400/480Vac	10.5/11.1W	11.7/12.3W
Connection Terminals		spring clamp	spring clamp
Parallel Use		no	yes [8]
Serial Use		no	yes
Operational Temperature Range		-10°C to +60°C	-10°C to +60°C
Derating between 60°C and 70°C		2W/°C	2.5W/°C
Dimensions	WxHxD in mm	72.5x75x103	72.5x75x103
Order Number		**ML90.200** [14]	**ML100.200**

Please check www.pulspower.com for detailed datasheets for all MiniLine units.

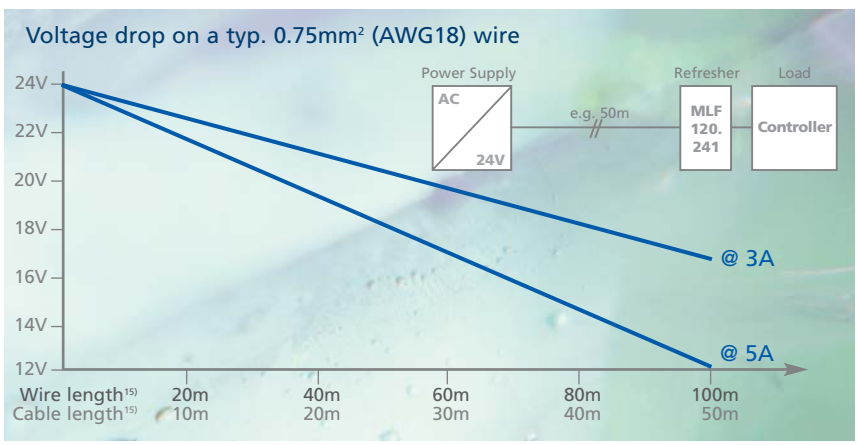
100-240V Input		ML15			ML30				
		5V 3A	12V 1.3A	24V 0.63A	5V 5A	12V 3A	24V 1.3A	±12V 2A	
Output		**5 - 5.5V**	**12 - 15V**	**24 - 28V**	**5 - 5.5V**	**10 - 12V** [5]	**24 - 28V**	**±12 - ±15V** [6]	
Output Current		3 - 3A	1.3 - 1.0A	0.63 - 0.54A	5A	3 - 2.5A	1.3 - 1.1A	2.0 - 1.6A	
Output Power		15W	15W	15W	25W	30W	30W	36W	
Ripple & Noise		<50mVpp	<75mVpp	<50mVpp	<50mVpp	<10mVpp	<50mVpp	<50mVpp	
AC Input		100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	
Inrush Current [1]	120/230Vac	16/31A	16/31A	16/31A	17/35A	17/35A	17/35A	17/35A	
Buffer Time [1]	120/230Vac	45/186ms	46/191ms	47/196ms	52/230ms	46/200ms	46/200ms	54/236ms	
DC Input Voltage		85-375Vdc	85-375Vdc	85-375Vdc	85-375Vdc	85-375Vdc	85-375Vdc	85-375Vdc	
MTBF [2]	120/230Vac	2.8/2.7 Mio h	3.7/3.8 Mio h	4.3/4.4 Mio h	1.8/2.0 Mio h	2.3/2.5 Mio h	3.4/3.6 Mio h	2.8/3.0 Mio h	2.2
Efficiency [1]	120/230Vac	76.8/77.2%	83.0/83.6%	87.8/88.4%	79.0/80.0%	82.6/84.0%	87.0/87.5%	84.0/86.0%	
Power Losses [1]	120/230Vac	4.6/4.5W	3.2/3.1W	2.1/2.0W	6.6/6.3W	6.3/5.7W	4.5/4.3W	6.9/5.9W	
Connection Terminals		screw terminals	screw terminals	screw terminals	spring clamp	spring clamp	spring clamp	spring clamp	sp
Parallel Use		yes [8]	yes [8]	yes [8]	yes [8]	yes [8]	yes [8]	no	
Serial Use		yes	yes	yes	yes	yes	yes	no	
DC-OK Signal		no	no	no	no	no	no	no	
Dimensions	WxHxD in mm	22.5x75x91	22.5x75x91	22.5x75x91	45x75x91	45x75x91	45x75x91	45x75x91	
Weight		130g	130g	130g	240g	250g	230g	240g	
Order Number		**ML15.051** NEW	**ML15.121** NEW	**ML15.241** NEW	**ML30.101**	**ML30.102**	**ML30.100**	**ML30.106**	

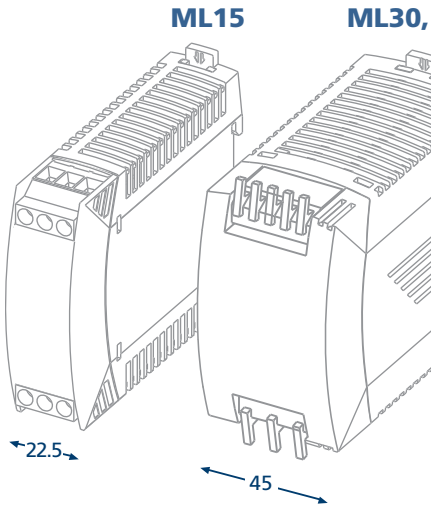
NEW

24V Refresher 120W

Avoid undervoltage situations at the end of long cable runs. The „Refresher" MLF120.241 restores the 24V and ensures stable voltage at the load. The output is adjustable between 24 and 28V and can be loaded with up to 5A. The input may vary between 16 and 32Vdc and even 12Vdc are allowed temporarily or with reduced output current. The compact design (only 45mm in width) and the wide temperature range from –25°C to +60°C make universal use easy.

Available Q4/2008

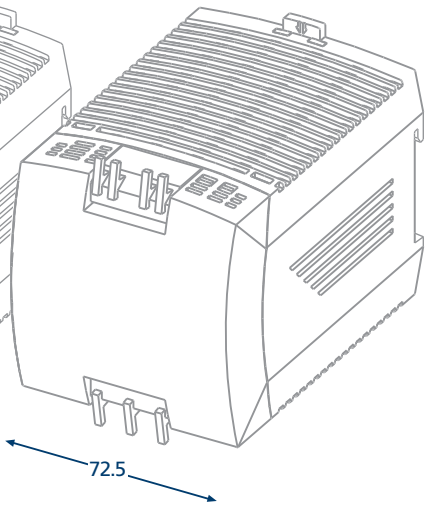




1) typical values at rated load and **40°C**
2) according to SN29500 at rated load and **40°C**
3) with conformal coated printed circuit board
4) with pluggable screw terminals (depth: 98mm)
5) 12V preset, remove jumper to set unit to 10V (range: 10 to12V)
6) ±15V preset, remove jumper to set unit to ±12V (range: ±12 to ±15V)
7) 15V preset, remove jumper to set unit to 12V (range: 12 to15V)

ML50				ML70	ML100			
12V 4.2A	24V 2.1A	24V 2.1A	48V 1.05A	24V 3A	24V 3.95A	12V 7.5A	24V 4.2A	48V 2.1A
12 - 15V [7]	24 - 28V	24 - 28V	48 - 56V	24 - 28V	24 - 28V	12 - 15V	24 - 28V	48 - 56V
4.2 - 3.3A	2.1 - 1.8A	2.1 - 1.8A	1.05 - 0.9A	3 - 2.6A	3.95 - 3.4A	7.5 - 6A	4.2 - 3.6A	2.1 - 1.8A
50W	50W	50W	50W	72W	95W	90W	100W	100W
<50mVpp	<50mVpp	<50mVpp	<100mVpp	<50mVpp	<50mVpp	<50mVpp	<50mVpp	<100mVpp
100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-240Vac -15%/+10%	100-120Vac/ 220-240Vac -15%/+10% [11]	100-120Vac/ 220-240Vac -15%/+10% [12]	100-120Vac/ 220-240Vac -15%/+10% [12]	100-120Vac/ 220-240Vac -15%/+10% [12]	100-120Vac/ 220-240Vac -15%/+10% [12]
17/35A	17/35A	17/35A	17/35A	26/30A	22/37A	22/37A	22/37A	22/37A
40/180ms	40/180ms	40/180ms	40/180ms	47/48ms	41/46ms	41/46ms	38/44ms	38/44ms
85-375Vdc	85-375Vdc	85-375Vdc	85-375Vdc	220-375Vdc	220-375Vdc	220-375Vdc	220-375Vdc	220-375Vdc
2/2.4 Mio h	2.5/2.6 Mio h	2.5/2.6 Mio h	1.9/2.0 Mio h	1.9/2.0 Mio h	1.5/1.6 Mio h	1.2/1.3 Mio h	1.5/1.6 Mio h	1.6/1.7 Mio h
87.5/90.0%	88.4/89.0%	88.4/89.0%	88.9/90.3%	90.6/91.5%	88.5/90.0%	87.7/88.5%	88.5/90.0%	90.4/91.8%
7.1/5.6W	6.6/6.2W	6.6/6.2W	6.2/5.4W	7.5/6.7W	11.6/9.9W	12.6/11.7W	13.0/11.1W	10.6/8.9W
pring clamp	spring clamp	spring clamp	spring clamp	spring clamp	spring clamp	spring clamp	spring clamp	spring clamp
yes [8]	yes [8]	yes [10]	yes [8]	yes [8]	no	yes [9]	yes [9]	yes [9]
no	yes	yes	yes	yes	no	no	yes	yes
no	yes	yes	no	no	no	no	no	no
45x75x91	45x75x91	45x75x91	45x75x91	45x75x91	72.5x75x103	72.5x75x103	72.5x75x103	72.5x75x103
260g	240g	240g	240g	260g	360g	360g	360g	360g
ML50.102	ML50.100 ML50.109 [3]	ML50.101 ML50.111 [4]	ML50.105	ML70.100	ML95.100 [14]	ML100.102	ML100.100 ML100.109 [3]	ML100.105

50, 70 **ML90, 95, 100**



8) up to max. 50°C ambient, no load sharing between the units
9) with „single/parallel use" jumper for load sharing in parallel use
10) load sharing function included, output at no load: 25V, rated load: 24V
11) with manual selector
12) with auto-select input
13) max. 16A allowed during overload
14) NEC Class 2 version
15) a wire is a single conductor, a cable consists of multiple wires in one „pipe"; The wire length is usually twice the cable length

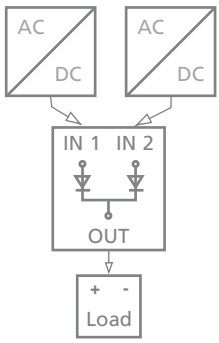
Diode Module 10A

The MLY02.100 is a dual input diode module with a common output for applications such as:

- Building 1+1 and n+1 redundant power supplies
- Isolating of buffered branches or other sensitive loads
- Preventing unwanted return voltages from the load

The diode module may be operated with voltages up to 60V and the rated output current is 10A[13] and it does not matter whether the current comes from only one or both inputs. The voltage loss between input and output is 0.9V at 10A. The compact design (only 45 mm in width) and the wide temperature range from -40°C to +60°C make universal use easy.

Order Number: MLY02.100



Success with Innovation and Quality

PULS is the only organisation solely focused on DIN-Rail power supplies. This allows Bernhard Erdl and his experienced team to develop premium pioneer products. The wide range of SilverLine units had already set the market standard for DIN rail power supply units 10 years ago. This great success has continued with the MiniLine and DIMENSION family units. International honours such as the Frost & Sullivan Technology Leadership Award confirms that PULS is on the right track. The high quality of the units is ensured by the company's own factories in the Czech Republic and China.

The DIMENSION Family

If more power is needed than the MiniLine can deliver, the units of the DIMENSION family offer many advantages. This family consists of single and three-phase power supplies, DC/DC converters, buffer modules, DC-UPS's, diode and redundancy modules and many installation accessories. Ask for our Dimension brochure for more information.

Efficient Power Supplies for a Greener World

The most up-to-date technologies in power supply design make it possible to develop highly efficient units with low energy consumption. For the user this gives double the advantage: while you're protecting the environment, you're also saving money on electricity. For example, in the 20A class, losses are up to 60% lower than in other commercially available units. The savings made as a result can be much higher than the costs of procuring the unit, taking into account a running time of 5 years and 24/7 operation.

PULS – MGV

If you can't find what you need among the PULS standard units, take a look at the website of our subsidiary company MGV. In addition to a wide selection of standard units, MGV can also offer customised power supplies. MGV has been a member of the PULS group of companies since 2004. *www.mgv.de*

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