

Features

Range of modular DC power supplies

- High efficiency (up to 91%)
- Low (< 0.4 W) stand-by power absorption
- Thermal protection: internal, with V_{out} shutdown
- Short circuit protection: hiccup (auto-recovery) mode
- Input protection: replaceable internal fuse plus spare (78.36)
- Overvoltage protection: varistor
- Flyback topology
- Compliant to EN 60950-1 and EN 61204-3
- Parallel working for automatic redundancy: with OR-IN diode
- Dual and series connection permissible
- Small dimensions: 17.5 mm (1 module) or 70 mm (4-modules) wide, 60 mm deep
- 35 mm rail (EN 60715) mount

Screw terminal



For outline drawing see page 8

Output specification

Output current (-20...+40°C, 230 V AC input) A	0.63	1.25	1.7
Rated current I_N (50°C, full input operating range) A	0.50	1	1.5
Rated voltage V	24	12	24
Rated power W	12	12	36
Output power (-20...+40°C, 230 V AC input) W	15	15	40
Peak current capability for 3 ms * A	2	3	8
Output voltage adjust V	—	—	—
Voltage variation (from no-load to full-load)	< 1 %	< 1 %	< 1 %
Voltage ripple @ full load ** mV	< 200	< 200	< 200
Hold-up time@full load: with 100 V AC input ms	< 10	< 10	< 20
	with 260 V AC input ms	< 90	< 100

Input specification

Nominal voltage (U_N)	V AC (50/60 Hz)	110...240	110...240	110...240
	V DC (not polarized)	220	220	220
Operating range	V AC (50/60 Hz)	100...265***	100...265***	100...265***
	V DC	140...370	140...370	140...370
Max power absorption	VA	28.2	32	57.5
	W (@ 100 V AC, 50 Hz)	14.2	17.2	43
Stand-by power absorption W		< 0.4	< 0.4	< 0.4
Power factor		0.50	0.53	0.74
Max current absorption (@ 88 V AC) A		0.25	0.30	0.6
Max. inrush current (peak @ 265 V) for 3 ms A		10	10	12
Replaceable protection fuse		—	—	1 A - T

Technical data

Efficiency (@ 230 V AC) %	85	87	86
MTTF H	> 400.000	> 400.000	> 600.000
Start-up delay s	< 1	< 1	< 1
Dielectric strength between input/output V AC	2,500 (class II)	2,500 (class II)	3,000 (class II)
Dielectric strength between input/PE V AC	—	—	—
Ambient temperature range **** °C	-20...+60	-20...+60	-20...+70
Protection category	IP 20	IP 20	IP 20

Approvals (according to type)



78.12...2400



• 24 V DC, 12 W output

NEW 78.12...1200



• 12 V DC, 12 W output

78.36



• 24 V DC, 36 W output

- * (see diagrams L78)
- ** peak to peak, 100 Hz component, with 100 V AC input
- *** 88...100 V AC with output current limited to 80 % I_N
- **** (see derating diagrams P78)

Features

Range of modular DC power supplies

- High efficiency (up to 91%)
- Low (< 0.4 W) stand-by power absorption
- Thermal protection: internal, with V_{out} shutdown
- Short circuit protection: hiccup (auto-recovery) mode
- Overload protection: fold-back mode (78.50 only)
- Input protection: replaceable internal fuse plus spare
- Overvoltage protection: varistor
- Flyback topology
- ZVS (Zero-voltage-switching), quasi-resonant mode technology
- Compliant to EN 60950-1 and EN 61204-3
- Parallel working for automatic redundancy: with OR-IN diode
- Dual and series connection permissible
- Small dimensions: 70 mm (4-modules) wide, 60 mm deep
- 35 mm rail (EN 60715) mount


Screw terminal



For outline drawing see page 8


Output specification		78.60	78.50
Output current (-20...+40°C, 230 V AC input) A		2.8	4.6
Rated current I_N (50°C, full input operating range) A		2.5	4.2
Rated voltage V		24	12
Rated power W		60	50
Output power (-20...+40°C, 230 V AC input) W		68	55
Peak current capability for 3 ms *	A	10	12
Output voltage adjust V		24...28	12...15
Voltage variation (from no-load to full-load)		< 1 %	< 1 %
Voltage ripple @ full load **	mV	< 200	< 200
Hold-up time@full load: with 100 V AC input ms		< 20	< 30
	with 260 V AC input ms	< 130	< 150
Input specification		78.60	78.50
Nominal voltage (U_N)	V AC (50/60 Hz)	110...240	110...240
	V DC (not polarized)	220	220
Operating range	V AC (50/60 Hz)	88...265	88...265
	V DC	140...370	140...370
Max power absorption	VA	90	89
	W (@ 100 V AC, 50 Hz)	67.5	58.3
Stand-by power absorption	W	< 0.4	< 0.4
Power factor		0.75	0.65
Max current absorption (@ 88 V AC)	A	0.9	0.85
Max. inrush current (peak @ 265 V) for 3 ms	A	30	30
Replaceable protection fuse		1.6 A - T	1.6 A - T
Technical data		78.60	78.50
Efficiency (@ 230 V AC)	%	91	90
MTTF	H	> 500.000	> 400.000
Start-up delay	s	< 1	< 1
Dielectric strength between input/output	V AC	3,000 (class II)	3,000 (class II)
Dielectric strength between input/PE	V AC	1,500 (class I)	1,500 (class I)
Ambient temperature range ***	°C	-20...+70	-20...+70
Protection category		IP 20	IP 20
Approvals (according to type)			

78.60



- 24 V DC, 60 W output
- Voltage regulation 24-28V
- ZVS technology

78.50



- 12 V DC, 50 W output
- Voltage regulation 12-15V
- ZVS technology
- Suitable for battery charging

* (see diagrams L78)
 ** peak to peak, 100 Hz component, with 100 V AC input
 *** (see derating diagrams P78)