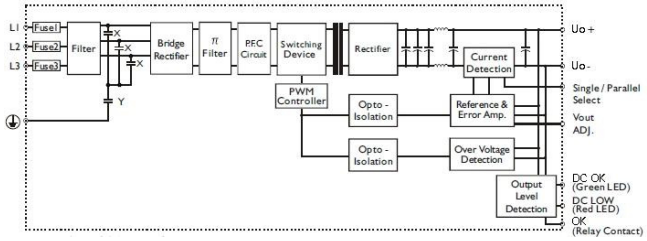
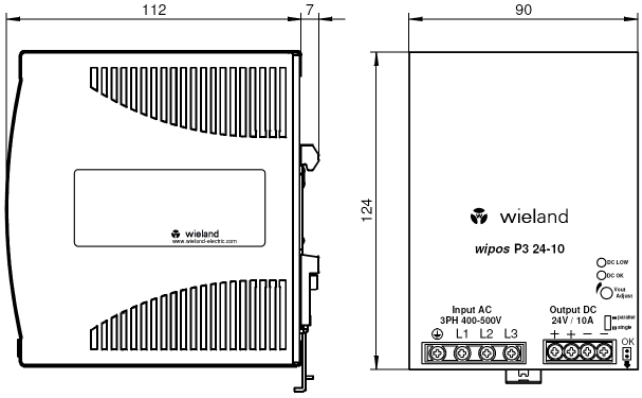
wipos P3 24-10

Switching power supply
24 V DC / 10 A
81.000.6170.0

- Primary switching power supply, three phase
- Output: 24 V DC / 10 A (adjustable 22.5 – 28.5 V DC)
- Short circuit proof (fold forward)
- Input: 400 - 500 V AC; 480 - 820 V DC
- Full load up to 60 °C
- PFC technology
- Vertical mount
- Parallel operation possible
- 100 % burn-in



Block diagram



Dimensional diagram

Technical Data

wipos P3 24-10	Part number: 81.000.6170.0
Rated output power [P_O]	240 W
Rated output voltage [U_O]	24 V DC
Rated output current [I_{ON}]	10 A DC
Efficiency typ. / min.	90 % / 88 %
Minimum load	none
Output voltage trim range (U_{IN_AC}, 0.8 x I_{ON})	22.5 V . . . 28.5 V
Output voltage accuracy (U_{IN_AC}, I_{ON})	-0 % / +1 %
Line regulation	±1 %
Load regulation (U_{IN_AC}) single operation	±1 %
Temperature coefficient (U_{IN_AC}, I_{Omin})	± 0.03 % / K
Rated overload protection	120 % - 140 % Temperature switch-off at 100 – 110 °C; auto-restart after cool down
Output short circuit (U_O, I_{ON})	Current limited (fold forward)
Ripple & noise (U_{IN_AC}, I_{ON}, BW = 20 MHz)	<100 mV_{ss}
Operation indicator output voltage OK (U_I , I_{ON}) output voltage too low (U_I, I_{ON})	Display range "DC OK", LED green (U_O 17.6 ... 19.4 V) "DC LOW", LED red (U_O < 17.6 ... 19.4 V)
Parallel operation (0.1 . . . 0.9 x I_{ON})	yes, max. 2 units (slide switch)
Derating (61 °C . . . 71 °C)	2.5 % / K (see Fig. 1 Derating)
Overvoltage protection (U_{IN_AC}, I_{ON})	30 . . . 33 V
Relay contact ("OK") closes at	U_O > 19.4 V DC (U_O 17.6 ... 19.4 V)
Relay contact load current (60 V DC) max.	0.3 A
Relay contact isolation voltage	500 V DC

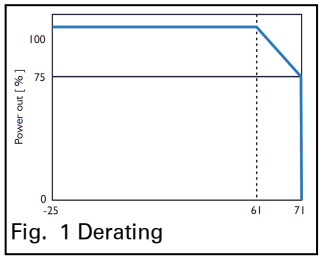


Fig. 1 Derating

Technical Data

wipos P3 24-10		Part number: 81.000.6170.0
Rated input voltage AC	[U_{IN_AC}]	3PH 400-500 V AC
Line frequency AC		47 – 63 Hz
Power factor correction filter (PFC)		yes (0.55)
Input voltage range AC	[U_{I_AC}]	3PH 340 ... 575 V
Input voltage range 2PH AC	[U_{I_AC}]	2PH 340 ... 575 V, I_O = 7.5 A max.
Input voltage range DC	[$U_{I\ DC}$]	480 ... 820 V
Rated input current ($U_{I\ AC}$ = 400 V, I_{ON})		0.85 A max.
Inrush current ($U_{IN\ AC}$, I_{ON})		20 A typ.
Input fuse		3 x T2.0 A / 600 V AC (internal)
Hold up time (U_{IN_AC}, I_{0N})		> 20 ms
Internal surge voltage protection		Varistor
Isolation voltage (input / output)		3000 V AC / 4242 V DC
Isolation resistance (input / output)		100 MOhm
Ventilation / Cooling		free convection
Mounting conditions (free space)		25mm free space on all sides recommended for cooling; up to 50 °C no horizontal space needed
Pollution level		2
Operating ambient temperature	[T_U]	-40 °C . . . +71 °C
Humidity in operation		20 – 95 % RH
Storage temperature	[T_U]	-40 °C . . . +85 °C
Mounting on		DIN rail 35 mm (EN 60715)
Degree of protection		IP 20
MTBF		488,000 h
Dimensions (W x H x D)		90 x 124 x 119 mm
Weight		ca. 1.1 kg
Housing material		Metal
Connector cross section screw terminals		
min.	solid / stranded	0.5 mm² (AWG24)
max.	solid / stranded	6 mm² (AWG10)
Strip length		8 mm
Torque	input terminals	1.0 Nm max.
	output terminals ("+", "-")	0.6 Nm max.
Connector cross section "OK" (spring terminal)		
min.	solid / stranded	0.13 mm² (AWG26)
max.	solid / stranded	0.5 mm² (AWG20)
Strip length		9 - 10 mm
Approvals and standards		
UL / cULus		UL 508 Listed, UL60950-1 Recognized
TUV / Safety		EN60950-1, EN61558-1, EN61558-2-17 (follow EN60204), IRAM
CE		EN61000-6-3, EN 55022 Class B, EN61000-3-2, EN61000-3-3, EN61000-6-2, EN55024, EN61000-4-2, Level 4, EN61000-4-3 Level 3, EN61000-4-4 Level 4, EN61000-4-5 L-N Level 3, L/N-FG Level 4, EN61000-4-6 Level 3, EN61000-4-8 Level 4, EN61000-4-11, ENV 50204 Level 2, EN61204-3
Control Elements		
Slide switch 'S / P'	'single' 'parallel'	Single operation parallel operation
Terminal connections		
-		2 x output voltage 24 V, negative output terminal (internally connected)
+		2 x output voltage 24 V, positive output terminal (internally connected)
OK		2 x relay (normally closed)
L1, L2, L3		AC: phase conductor, DC: no polarity
⏚ (PE)		PE (Ground), always connect