Datasheet Series PLI



Model	PLI16	860EC	
Order no.	17-069-001-02		
Basic operating modes		CC, CV, CR, CP	
Standard interfaces		RS-232, USB, LAN, CAN	
Max. input voltage Vmax		600 V	
Min. input voltage Vmin ¹⁾		2.5 V	
Max. load current Imax		624 A	
Continuous power		16800 W	
Short-time power 2)		16800 W	
Voltage setting		0 600 V	
Current ranges		0 624 A	
Resistance ranges		0.008 0hm 10.3398 0hm	
Power ranges continuous/short-time 3)		0 16800 W	
Rise and fall time fast / medium / slow 4)		35 / 150 / 2000 μs	
Load terminals (front) 5)		-	
Load terminals (rear) ⁶⁾		FKS40/12-SM12	
Mains voltage ⁷⁾		1/N/PE AC 230 V 50 60 Hz	
Mains voltage toggleable ⁸⁾		1/N/PE AC 115 V 50 60 Hz	
Power consumption		700 VA	
Noise max. ca. 9)		77 dB(A)	
Weight ca.		112 kg	
Housing / 3D model ¹⁰⁾		19" - 14 U / PLI_M32	
Width x Height x Depth		483 x 622 x 630 mm	

- 1. Minimum input voltage for maximum static load current.
- 2. Level and duration of the peak power depend on the previous power.
- 3. The setting range extends max. to the possible peak power.
- 4. Rise and fall times are defined of 10 % ... 90 % and 90 % ... 10 % of the maximum current (CC mode, fast regulation speed, tolerance ±20 %). Rise and fall time at setting "medium": ca. 150 µs, "slow": ca. 2 ms.
- 5. BPK4-30L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 4 mm, max. 30 A BPK4-60L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 6 mm, max. 60 A FKS20/5-SM8: Flat copper bars 20 x 5 mm vertical with hole for screw M8
 - FKS25/8-SM10: Flat copper bars 25 x 8 mm vertical with hole for screw M10 $\,$
 - FKS25/10-SM10: Flat copper bars 25 x 10 mm vertical with hole for screw M10 $\,$
 - FKS40/12-SM12: Flat copper bars 40 x 12 mm vertical with hole for screw M12

Datasheet Series PLI



Models with copper bars (FKS) are delivered with safety covers.

- 6. BPK4-30L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 4 mm, max. 30 A BPK4-60L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 6 mm, max. 60 A FKS20/5-SM8: Flat copper bars 20 x 5 mm vertical with hole for screw M8 FKS25/8-SM10: Flat copper bars 25 x 8 mm vertical with hole for screw M10 FKS25/10-SM10: Flat copper bars 25 x 10 mm vertical with hole for screw M10 FKS40/12-SM12: Flat copper bars 40 x 12 mm vertical with hole for screw M12 Models with copper bars (FKS) are delivered with safety covers.
- 7. Mains voltage tolerance: $\pm 10~\%$
- 8. Mains voltage tolerance: ±10 %
- 9. Measured on the front from distance of 1 m.
- 10. Largest width and depth without wiring. 1 U = 44.45 mm.

PLI Series Technical Data

Operating modes					
Basic operating	CC, CV, CR, CP				
modes					
Combined opera- ting modes	CC+CV, CR+CC+CV, CP+CC+CV, CV+CC				
Accuracy of setting					
	of setting		of corresponding range		
Voltage	±0.2 %		±0.05 %		
Current	±0.2 %		PLI MR in R1 ±0 others ±0.05 %	.1 %,	
Resistance (at 5 % to 100 % of voltage range)	±1.4 %		±0.3 % of curre	nt range	
Power (at V and I > 30 %	PLI EC	others	PLI EC	others	
of range)	±1 %	±0.35 %	±0.3 %	±0.1 %	
(at V and I > 5 % and < 30 % of range)	±2 %	±0.7 %	±0.75 %	±0.25 %	
Resolution	14 bits				
Accuracy of adjustable	able protections				
	of setting		of corresponding range		
Overcurrent pro-	±1.4 %		±0.3 %		
Undervoltage	±1.4 %		±0.3 %		
protection Resolution	12 hits		±0.0 /0		
Accuracy of measurement slow					
Accuracy of incusaren	of measured value (real value)		of corresponding range		
Valtage					
Voltage Current	±0.01 % ±0.2 %		±0.005 % PLI MR in R1 ±0.1 %,		
Current	±0.2 /0		others ±0.05 %	1.1 /0,	
Resistance	is calculated from current and voltage				
Power	is calculated from current and voltage				
Resolution	23 bits				
Sampling time	250 ms, not triggerable				
Accuracy of display					
Number of decimal places	5				
Accuracy	Accuracy of measurement slow ±1 digit of the display value				
Accuracy of measurement fast					
	of measured value (real value) of corresponding range		ange		
Voltage	±0.1 %		±0.05 %		
Current	±0.2 %		PLI MR in R1 ±0.2 %, others ±0.1 %		
External control voltage	±0.2 %		±0.1 %		
Resistance	calculated from voltage and current values				
Power	calculated from voltage and current values				
Resolution	16 Bit				
Sampling time	200 μs 1000 s				
Accuracy of trigger vo	ltage and current				
Voltage	±1 % of range				
Current	±1 % of range				
Dynamic function (LIS					
No. of load levels	max. 300, with ramp and dwell time setting				
	min.		max.		
Dwell time	200 μs		1000 s		
Ramp time	0 s		1000 s		
Resolution Accuracy of the	200 μs				
setting times	±0.02 %				
Delay at triggered start	max. 300 µs				

e 0.5 to 30 s, resolution 0.1 timestamp, voltage, curre limited by USB memory co.csv	nt
timestamp, voltage, curre limited by USB memory co	nt
limited by USB memory ca	
· · ·	
.CSV	apacity
200 μs 1000 s, resolution	n 200 μs, synchronized with
timestamp, voltage, curre	nt
max. 40,000	
9, selectable (incl. program 1 for last device settings a	
ialog control 0 10 V	
of setting	of corresponding range
±0.2 %	±0.1 %
±0.2 %	PLI MR in R1 ± 0.2 %, others ± 0.1 %
±1.6 %	±0.4 % of current range
±0.55 %	±0.2 %
±0.9 %	±0.35 %
±1 %	±0.4 %
±1 %	±0.4 %
Input resistance of analog	inputs >10 kΩ
I/O port: accuracy of analog monitor outputs 0 10 V	
of analog signal of real value	offset voltage
±0.2 %	±15 mV
±0.2 %	±15 mV
load capacity minimal 2 kΩ	
oltages	
standard I/O port	isolated I/O port (option PLIO6)
PLIxxxxZV: must be galvanically isolated	PLIxxxxZV: max. 2 V ¹⁾ all others: max. 800 V ¹⁾
	max. 125 V ¹⁾
	max. 40,000 9, selectable (incl. program 1 for last device settings a alog control 0 10 V of setting ±0.2 % ±0.2 % ±1.6 % ±1.6 % ±1.6 % ±1 % ±1 % Input resistance of analog alog monitor outputs 0 10 of analog signal of real value ±0.2 % ±0.2 % toad capacity minimal 2 killtages standard I/O port PLIXXXXZV: must be

The specified accuracies refer to an ambient temperature of 23 ± 5 °C. The specified accuracies are valid when the sense lines are connected and when the unit is connected to undisturbed voltages (ripple and noise < 0.1 %). At voltages with higher disturbance values the accuracy can change for the worse.

Technical Data

I/O port: control outpu	ts and inputs
Outputs	activation state load input (low active) status overload (OV, OCP, OPP, OTP, low active) trigger output (low active) programmable logic output (by SCPI command)
Output level	selectable, 3.3 V, 5 V, 12 V or externally programmable up to 30 V $$
Control inputs	activation state load input (low active) operating mode selection trigger input (high active) readable logic input (by SCPI command) control input (activates the analog signals, low active) remote shut-down (low active)
input level	3 30 V

$\begin{tabular}{ll} \mbox{Input resistance} & > 50 k\Omega \mbox{ when load input is off} \\ \mbox{diode function at reverse polarity up to nominal current,} \\ \mbox{except ZV models} \\ \mbox{Input capacity} & \mbox{see model overview} \\ \end{tabular}$	Input	
Input capacity see model overview	Input resistance	diode function at reverse polarity up to nominal current,
	Input capacity	see model overview
Parallel operation up to 5 devices in Master-Slave operation	Parallel operation	up to 5 devices in Master-Slave operation
Max. input voltage see model overview	Max. input voltage	see model overview
Min. input voltage see model overview	Min. input voltage	see model overview

Input: permissible voltages

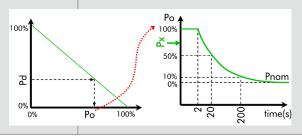
	standard I/O port	isolated I/O port (option PLIO6)
Vin-PE (neg. load	max. 125 V ¹⁾	PLIxxxxZV: max. 125 V ¹⁾
input - PE)		all others: max. 800 V ¹⁾
Vin+PE (pos. load input - PE)	Vmax + max. 125 V ¹⁾	PLIxxxxZV: Vmax + max. 125 V ¹⁾ all others: Vmax + max. 800 V ¹⁾

Power

Continuous power

Derating	-1.2 %/°C for Ta > 21 °C
Overload capability (short-time power)	see model overview The max. possible overload Po depends on the temperature of the device and therefore on the previously consumed continuous power Pd. The possible overload duration depends on the value of the overload Px.

see model overview (at Ta = 21 °C)



Protection and monitoring

Sense

Protecti	ve devices	overcurrent overpower overtemperature
Monitor	ing	overvoltage indication reverse polarity indication undervoltage indication (if the input voltage is too low for the set current)
Terminals		
Load in	put	see model overview

Operating conditions	
Operating temperature	5 40 °C
Stock temperature	-25 65 °C
Max. operating height	2,000 m above sea level
Pollution degree	2
Overvoltage category of mains	П
Max. humidity	80 % at 31 °C, linear decreasing to 50 % at 40 °C
Min. distance rear panel to wall or other objects	70 cm
Cooling	3-stage air cooling, up from 3200 W variably controlled
Noise. weight	see model overview
Mains voltage with option PLI18	see model overview 11 15 V DC
Mains cable	length max. 3 m cross-section of mains leads min. 1 mm²
Power consumption	see model overview

Housing	
Color Front Rear Top, side panels	RAL7035 (light grey) stainless steel RAL7037 (dusty grey)
Safety and EMC	
Protection class	1
Measuring category	O (CAT I according to EN61010:2004)
Electrical safety	DIN EN 61010-1 DIN EN 61010-2-030
EMC	DIN EN 61326-1 DIN EN 55011 DIN EN 61000-3-2 DIN EN 61000-3-3
Standard interfaces	
Nata interfaces	RS-232 LISB LAN CAN

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Data interfaces	RS-232, USB, LAN, CAN
I/O port	standard I/O port (not isolated)
Available options	
Data interfaces	GPIR

Mechanical options	
PLI10	19" installation kit for 1 device with ½ 19", 2 U
PLI11	19" installation kit for 2 devices with ½ 19", 2 U
PLI12	19" installation kit for 1 device with 19", 2 U
PLI13	19" installation kit for 1 device with 19", 3 U
PLI14	heavy-load castors (5 U and upwards)
Function enhance- ment PLI21 Accuracy	MPPT function with activation code see accuracy of measurement fast
Hardware extensions	
PLI06	galvanically isolated I/O port
PLI16-06 PLI16-12 Accuracy Load current Activation Activation time	Charger Starter Interface (CST) for 60 V models (660 V) Charger Starter Interface (CST) for 120V models (6120V) ±1 % ±200 mV max. 0.1 A can be coupled with activation state of load input 0.1 100 s ±0.3 s
PLI17	switch box for external load activation via I/O port
DC mains supply PLI18 PLI19	12 V DC mains supply (only for PLI14xx) 12 V DC mains supply (only for PLI32xx with housing ex-

Calibration, warranty	
FCC-PLIxx	Factory Calibration Certificate, twice for free
Warranty	2 years

PH2/7.62-BU16