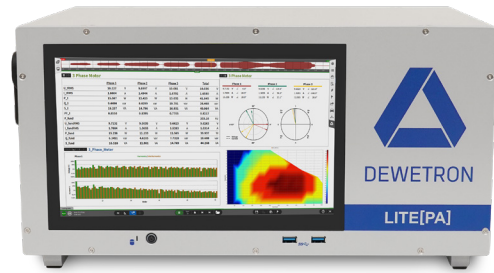


Key facts

- ▶ 4- or 8-phase high-precision power analyzer
 - 4 phases: LITE[PA]-4
 - 8 phases: LITE[PA]-8
- ▶ Voltage input: $1000 V_{RMS} / \pm 2000 V_{PEAK}$
- ▶ Current input: $1 A_{RMS} / \pm 2 A_{PEAK}$ (others on request)
- ▶ Basic power accuracy: $\pm 0.04\%$ of reading
(0.5 Hz ... 1000 Hz)



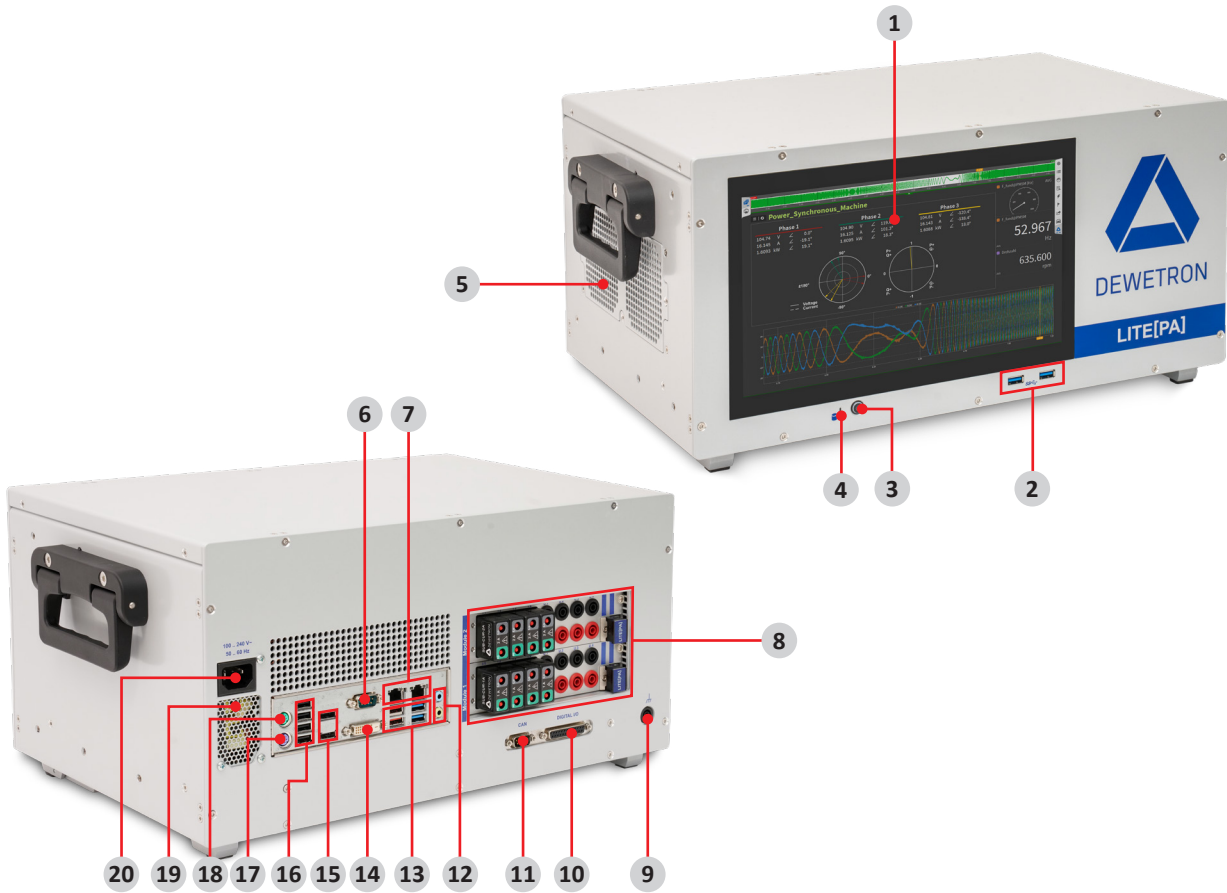
System specifications

LITE[PA]			
General			
Input channels	4 or 8 high-voltage inputs		
	4 or 8 current inputs		
	4 motor inputs		
	1 CAN port		
Sampling rate	max. 2 MS/s		
Resolution	24-bit		
ADC	SAR (Successive Approximation Register)		
Fixed high-voltage inputs			
Input range	$1000 V_{RMS} (\pm 2000 V_{PEAK}) CF = 2$		
Accuracy	DC	$\pm 0.02\%$ of reading $\pm 0.02\%$ of range	(f: frequency in kHz)
	0.5 Hz to 1 kHz	$\pm 0.03\%$ of reading	
	1 kHz to 5 kHz	$\pm 0.15\%$ of reading	
	5 kHz to 10 kHz	$\pm 0.35\%$ of reading	
	10 kHz to 50 kHz	$\pm 0.6\%$ of reading	
	50 kHz to 300 kHz	$\pm (0.02\% * f)$ of reading	
CMRR	>85 dB @ 50 Hz; >60 dB @ 1 kHz; >40 dB @ 100 kHz		
Bandwidth (-3 dB)	5 MHz		
Rated input voltage to earth according to EN 61010-2-30	600 V CAT IV / 1000 V CAT III		
Differential input (floating circuits)	600 V CAT IV / 1000 V CAT III / $2000 V_{DC}$		
Common mode voltage	$1000 V_{RMS}$		
Input resistance	5 M Ω ; 2 pF		
Connector	Safety banana sockets		
Modular current inputs			
Input range	$1 A_{RMS} (\pm 2 A_{PEAK})$		
Accuracy	DC	$\pm 0.02\%$ of reading $\pm 80 \mu A$	(f: frequency in kHz)
	0.5 Hz to 10 kHz	$\pm 0.03\%$ of reading	
	10 kHz to 30 kHz	$\pm 0.1\%$ of reading	
	30 kHz to 200 kHz	$\pm (0.015\% * f)$ of reading	
	200 kHz to 300 kHz	$\pm (0.1\% * f)$ of reading	
Rated input voltage to earth according to EN 61010-2-30	600 V CAT II		

LITE[PA]			
Bandwidth (-3dB)	300 kHz		
Connector	Safety banana plugs		
Input resistance	500 mΩ		
Other current inputs on request	0.2 A _{RMS} (±0.4 A _{PEAK}) 2 A _{RMS} (±4 A _{PEAK}) 20 A _{RMS} (±40 A _{PEAK}) 1 V _{RMS} (±2 V _{PEAK}) 5 V _{RMS} (±10 V _{PEAK})		
Power specifications			
Accuracy	DC	±0.03 % of reading ±0.03 % of range	(f: frequency in kHz)
	0.5 Hz to 1 kHz	±0.04 % of reading	
	1 kHz to 5 kHz	±0.2 % of reading	
	5 kHz to 10 kHz	±0.5 % of reading	
	10 kHz to 50 kHz	±(0.5 % +0.05 % * f) of reading	
Influence of power factor	Add 0.01 % * f/50 * v(1/PF ² -1)	(f: frequency in Hz)	
Typ. channel-to-channel phase mismatch	<250 ns (0.1° @ 1 kHz, 0.005° @ 50 Hz)		
Fundamental frequency			
– Range	0.1 Hz–200 kHz (>500 kS/s: >0.2 Hz; >1 MS/s: >0.5Hz)		
– Accuracy	±0.005% of reading ± 1 mHz		
Low pass filter (-3 dB, digital and analog combined)	100 Hz to 600 kHz freely programmable or OFF		
– Filter order and characteristics	2 nd , 4 th , 6 th , 8 th Bessel or Butterworth		
Motor inputs			
Counter inputs	2 advanced counters for speed sensors (encoders) 2 basic counters for torque inputs		
Input signal	CMOS/TTL compatible digital inputs; weak pull-up via 100 kΩ		
Time base accuracy	Typ. 2 ppm; max. 10 ppm		
Max. input frequency	10 MHz		
Sensor power supply	12 V (600 mA)		
Connector	D-SUB-25 socket		
Digital output			
Digital outputs	4 digital outputs (TTL)		
CAN			
Specification	CAN 2.0B (IN/OUT)		
Termination programmable	High impedance or 120 Ω		
Sensor power supply	5 V (100 mA) and 12 V (600 mA)		
Connector	D-SUB-9 connector		

LITE[PA]	
Software	
Raw data processing: visualization / storage	Yes / no
Cycle-by-cycle calculation U/I/P/Q/S/PF/W	Yes
Analysis of (intermediate) harmonics (IEC 61000-4-7)	Yes
High-frequency components	Yes
Voltage fluctuations(IEC 61000-4-15)	Yes
Flicker emissions (IEC 61400-21)	Yes
D/Q analysis	Yes
Mechanical power & Efficiency map	Yes
Rolling calculations	Optional
Advanced Math, i.e. Formulas, Filters, FFT,...	Yes
Reporting	Integrated reporting, many export data formats (*.xlsx, *.mat, *.dat, *.csv, etc.)
Data sharing and offline analysis	Unlimited free VIEW licenses for workgroups (for multiple analysis PCs)
Additional	
Temperature measurement	Via XR modules connected to CAN port
Host system data connection: SCPI / UDP / CAN / XCP	Yes / yes / yes / optional
System	
Display	11.6" multi-touch display
Data storage	256 GB SSD
Connectivity	10x USB, 2x display port, 1x DVI, 2x Gbit LAN Ethernet
Power supply	100 to 240 V _{AC} (max. 90 to 264 V _{AC}), active PFC
Power consumption	max. 280 W
Dimensions without feet (w x d x h)	442 x 281 x 222 mm (17.4 x 11.1 x 8.7 in); 19", 5 U
Weight	LITE[PA]-4: 9 kg (19.8 lb.) LITE[PA]-8: 9.5 kg (21 lb.)
Environmental specifications	
Operating temperature	0 .. +50 °C
Storage temperature	-20 .. +70 °C
Humidity	10–80 % non condensing, 5–95 % rel. humidity
Max. altitude	2000 m

Connections and ports



- | | |
|--------------------------------------------------|-----------------------------------------|
| 1. 11.6" multi-touch display | 11. CAN interface |
| 2. USB 3.2 interface connectors | 12. Audio interfaces |
| 3. Power on/off button | 13. USB 2.0 interface connectors |
| 4. HDD status LED | 14. DVI interface connector |
| 5. Intake vent and filter pad | 15. DisplayPort connector |
| 6. RS-232 interface connector (COM1) | 16. USB 3.2 interface connector |
| 7. Dual LAN GBit connectors | 17. PS/2 interface connector (mouse) |
| 8. 4 or 8 high-voltage and 4 or 8 current inputs | 18. PS/2 interface connector (keyboard) |
| 9. Chassis terminal | 19. Inlet air |
| 10. Motor inputs und digital outputs | 20. Main power supply input connector |