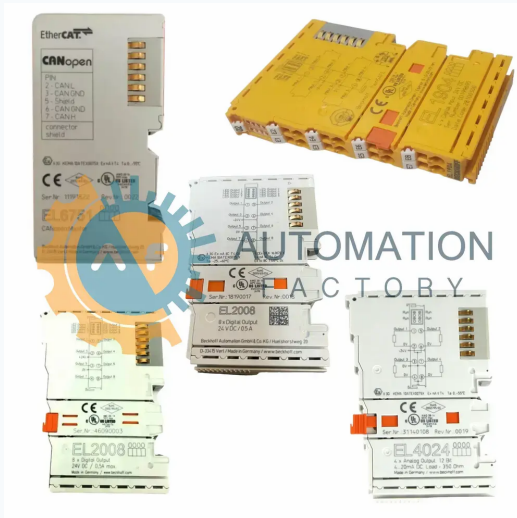




Beckhoff — EL EtherCAT Terminals

EL3453



 **In-Stock, Ships Today**

- ✓ Get a Quote in 5 minutes
- ✓ Parts ship in as little as 24 hours
- ✓ Up to half the cost of the manufacturer



Secure Online
Checkout



Free Ground
Shipping



One Year
Warranty

The **EL3453** is a three-phase power measurement terminal produced by Beckhoff within the EL EtherCAT Terminals series. This compact module mounts on a DIN-rail I/O segment to record line voltages and currents from an AC supply before transmitting the processed data to the controller. It supports energy management functions such as load monitoring, leakage detection, and efficiency analysis in industrial automation and building installations where precise electrical feedback is required. Its compact terminal format allows power measurements to be incorporated into a distributed control system alongside conventional digital and analog I/O modules.

The terminal uses **a transformer-coupled input stage** to isolate the measurement circuitry from the mains. Each sampled waveform is evaluated with **True RMS algorithms**, so the reported values remain consistent when loads produce distorted waveforms. Data reach the PLC through the high-speed **EtherCAT backplane**, allowing measurements to be synchronized with other process signals. The voltage inputs accept line-to-line potentials up to **690 V AC**. Selectable current paths accommodate **1 A AC or 5 A AC** secondary currents supplied by external current transformers. An IP20 enclosure protects against accidental contact with hazardous internal parts and is intended for installation inside a suitable control cabinet. The terminal processes voltage and current data locally, reducing the amount of calculation required from the connected controller while providing timely values for monitoring and analysis.

The EL3453 evaluates harmonic content up to the **40th harmonic**, providing visibility into waveform distortion that may cause transformer heating or interfere with sensitive drives. The housing occupies only **24 mm** of DIN-rail

width, allowing power monitoring to be added without requiring substantial cabinet space. Internally, **distributed clocks** align the sampling of the terminal's **3 current inputs** and corresponding voltage channels with the global EtherCAT time base. This synchronized acquisition supports phase-accurate power and energy calculations across connected equipment. The voltage channels connect through fused measurement points, while external current transformers provide scaled secondary signals to the current channels. These separate voltage and current paths allow the terminal to calculate electrical values from synchronized waveform samples without carrying the full load current through the I/O assembly.

Specifications

Approvals:	CE, UL	Connection Type:	Transformer-Coupled	Current consumption (e-bus):	Typical 260 mA
Current input ranges:	0.1, 1 (default), 5 A AC	Current input type:	Potential-free	Current Inputs:	3
Distributed clocks:	Yes	Harmonic Limit:	40th Harmonic	Housing Width:	24 mm
Measured values (electrical):	Current, voltage, P, Q, S	Measured values (others):	Energy, cos ϕ , frequency, THD, harmonics ≤ 63 rd	Measurement uncertainty:	$\pm 0.3\%$ FS (U/I), $\pm 0.6\%$ calculated
Measuring Method:	True RMS	Monitoring functions:	Phase sequence, failure, asymmetry, under/overvoltage	Network Interface:	EtherCAT
Nominal Current:	1 A AC / 5 A AC	Nominal Voltage:	690 V AC	Number of inputs:	4× current, 3× voltage
Number Of Phases:	3	Operating temperature:	-25 to +60°C	Protection Rating:	IP20
Single-phase operation:	Optional	Update interval:	10 ms (half mains period at 50 Hz)	Update synchronization:	Network-synchronous
Voltage input range:	Up to 690 V AC 3~ (UL-N 400 V)	Voltage Inputs:	3	Zero-cross detection:	Yes
Last Verified:	10/23/2026 11:46 PM				

Automation Factory sells factory new and pre-owned surplus products and maintains channels to procure supply. Automation Factory is not affiliated with nor an authorized distributor or representative of any manufacturers, brands or products listed. Designated trademarks, brand names, and brands appearing herein are the property of their respective owners.

Contact Us

 1620 Old Apex Road, Cary, NC 27513, USA

 **Toll Free:** [1-888-551-3082](tel:1-888-551-3082)

 **International:** [1-919-443-0207](tel:1-919-443-0207)

 **Fax:** [1-919-867-6204](tel:1-919-867-6204)

 **Email:** sales@wakeindustrial.com

Shipping Options



Payment Methods



Automation Factory sells factory new and pre-owned surplus products and maintains channels to procure supply. Automation Factory is not affiliated with nor an authorized distributor or representative of any manufacturers, brands or products listed. Designated trademarks, brand names, and brands appearing herein are the property of their respective owners.