

ES Series Protection Relays provide a wide range of cost-saving options to simplify protection related to Auto Transfer, Distribution, Generators, Motors, Process Control, and Transformers. Multiple DIN-rail mounting options are available.

FEATURES

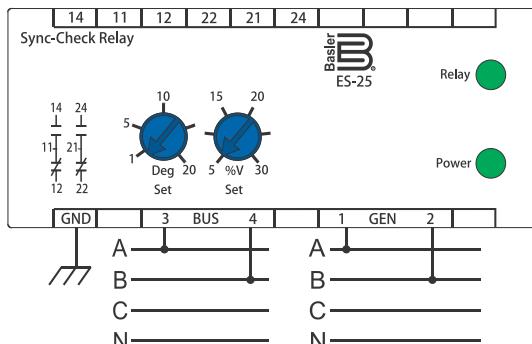
- Fundamental sensing technology
- DIN rail mounting
- Covers a wide range of applications
- Models available in six standard voltages
- Many self-powered options
- Conformal coating for improved protection against dust and corrosion
- HMI
 - Front Panel accessible adjustments
 - Front panel Indications - Red indicates a fault condition, green indicates a normal, non-fault condition.
- Digital microprocessor design
- Internal diagnostics
- High dependability and security
- Two form-C auxiliary contacts available on most models
- High quality relaying solutions based on more than 50 years of relaying experience and more than 30 years of reliable digital relaying design.

AVAILABLE MODELS

ES Models	Description
ES-25	Sync check
ES-27	Undervoltage
ES-59	Oversupply
ES-27/59	Under/Oversupply
ES-32	Power
ES-37	Undercurrent
ES-51	Overcurrent
ES-37/51	Under/Overcurrent
ES-47	Voltage Reverse Phase Rotation
ES-47N	Voltage Phase Unbalance
ES-47N/27	Voltage Phase Unbalance/Undervoltage
ES-49	Temperature
ES-55	Power Factor
ES-74S	Transducer/Shunt Sensing DC Millivolt
ES-74V	DC Voltage
ES-810	Overfrequency
ES-81U	Underfrequency
ES-810/U	Over/Underfrequency

BENEFITS

- Fundamental sensing technology provides high-end harmonic protection capabilities that prevent false tripping and allow you to be more selective with your settings.
- DIN-rail mounting provides easy, time-saving, and compact installation.
- Simple, economical, yet sophisticated protection for generator, transformer, distribution, process control, automatic transfer schemes, and motor applications.
- Many ES relay models are self-powered, eliminating the need for additional power sources.
- Relay settings are simple and intuitive, making setup fast with no PC required.
- Red and Green LEDs ensure clear indication of system status to avoid misinterpretations that could lead to downtime.
- Digital microprocessor design offers consistency for all models, enhances functionality, and improves performance.
- Internal diagnostics self-monitor and visually annunciate when relay function or accuracy is compromised, providing clear understanding of the functional status of the device.
- High dependability and security means relays trip when they are supposed to and do not trip when they are not supposed to.



Connections to Three-Phase System

Figure 1 - ES-25 Connection Diagram for a Typical Application

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FOR ADDITIONAL INFORMATION.

Basler Electric ES Series Protection Relays provide a wide range of functions with the following common specifications:

Power Supply

All units are self-powered except for the ES-37, ES-51, ES-37/51, ES-49, ES-74S, and ES-74V relays.

ES Relay Model	Nominal Sensing Input
25, 27, 59, 32, 47, 47N, 55, 810, 81U	120, 208, 240, 380, 415 or 480 Vac*
32, 37, 51, 55	5 A (or 1 A for 55)
74S	50 or 100 mVdc
74V	1, 10, 100, or 125 Vdc
49	10 Ω Cu or 100 Ω Pt

*For other nominal voltages, contact Basler Electric

Output

Relay Type: SPDT (form-C)
 AC Rating:
 Make and Carry: 250 V, 5 A
 Break Resistive or Inductive: 0.3 A at 250 V (L/R=0.04 max.)

CASE DIMENSIONS

Model Number	Case Width
ES-25	3.93 in. (100 mm)
ES-27	2.17 in. (55 mm)
ES-59	2.17 in. (55 mm)
ES-27/59	3.93 in. (100 mm)
ES-32	3.93 in. (100 mm)
ES-37 1-Phase	2.17 in. (55 mm)
ES-37 3-Phase	3.93 in. (100 mm)
ES-51 1-Phase	2.17 in. (55 mm)
ES-51 3-Phase	3.93 in. (100 mm)
ES-37/51 1-Phase	3.93 in. (100 mm)
ES-47	2.17 in. (55 mm)
ES-47N	2.17 in. (55 mm)
ES-47N/27	2.17 in. (55 mm)
ES-49	3.93 in. (100 mm)
ES-55	3.93 in. (100 mm)
ES-74S	2.17 in. (55 mm)
ES-74S O/U	3.93 in. (100 mm)
ES-74V	2.17 in. (55 mm)
ES-74V O/U	3.93 in. (100 mm)
ES-81U	2.17 in. (55 mm)
ES-810	2.17 in. (55 mm)
ES-810/U	3.93 in. (100 mm)

ES relays with optional auxiliary relay output contacts are always supplied in a wide case.

SPECIFICATIONS

- DC Rating:
 - Make and Carry: 125 V, 1 A
 - Break Resistive or Inductive: 0.3 A at 125 V (L/R=0.04 max.)
- Applied Standards**
 - For all ES Series Protection Relays:
 - IEC 60255-1 Measuring Relays and Protection Equipment-Part 1: Common requirements
 - IEEE C37.90™-2005 Relays and Relay Systems Associated with Electric Power Apparatus
 - IEEE C37.90.1™-2012 Surge Withstand Capability Tests for Relays and Relay Systems Associated with Electric Power Apparatus
 - IEEE C37.90.2™-2004 Withstand Capability of Relay Systems to Radiated EMI from Transceivers
 - IEEE C37.90.3™-2001 ESD Tests for Protective Relays
 - For ES-74S Relay only:
 - IEEE 421.3™-1997 For High-Potential Test Requirements for Excitation Systems for Synchronous Machines (for field voltages up to 600 Vdc and bridge input voltages up to 1,300 Vac)

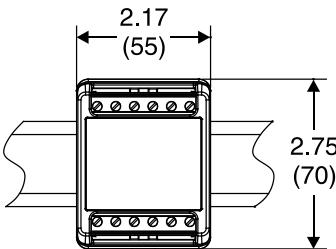


Figure 2 - Narrow Case Size in Inches (millimeters) (Front View)

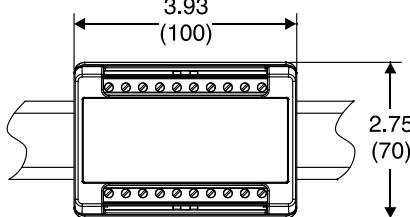


Figure 3 - Wide Case Size in Inches (millimeters) (Front View)

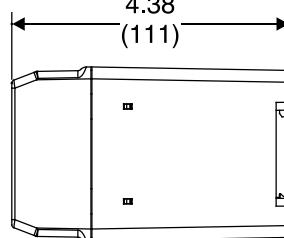


Figure 4 - Case Size in Inches (millimeters) (Side View)

Agency/Certifications

- UL listed (UL 508, CSA C22.2 No. 0 and 14),
- CE compliant (LVD, EMC, and RoHS2), EAC certified

Environmental

- Operating Temp: -40°C to 70°C (-40°F to 158°F)
- Storage Temp: -40°C to 85°C (-40°F to 185°F)
- Relative Humidity: ≤95% non-condensing
- As required by IEC 60255-27:
 - Ingress Protection: IP50 Case, IP20 Terminals
 - Pollution Degree: 1
 - Insulation: Class II
 - Overshoot: Category III

Physical

- Case Material: Complies with UL 94 V-0
- Weight: 0.85 lb (0.38 kg) narrow case
1.10 lb (0.50 kg) wide case
- Case Dimensions: See chart and figures 2-4 below
- Mounting (HxD): DIN rail 1.38 x 0.29 inches (35 x 7.5 mm)
- Complies with IEC 60715

For complete specifications, download the instruction manuals at www.basler.com.

RELATED PRODUCTS

- [BE1-11 Protection System](#)
 - Designed with many features to address issues with reliability arising from the complexity of programming.
- [Cases, Covers, Connectors, Mounting, Batteries, and Miscellaneous](#)
 - Accessories are designed for adaptive customization with your protective device.

ACCESSORIES

- [Basler Electric Mounting Rails](#)
 - 3.0 in. (76.0 mm) wide Basler P/N: 9323900001
 - 5.5 in. (140 mm) wide Basler P/N: 9323900002
 - 8.0 in. (203 mm) wide Basler P/N: 9323900003
 - 39.4 in. (1,000 mm) wide Basler P/N: 17366
- [DIN Rail End Stops](#)
 - Basler P/N: 31761



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