

ADVC Controller Range



Advancing Your Network



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ADVC Controller Range

Two Controller Solutions

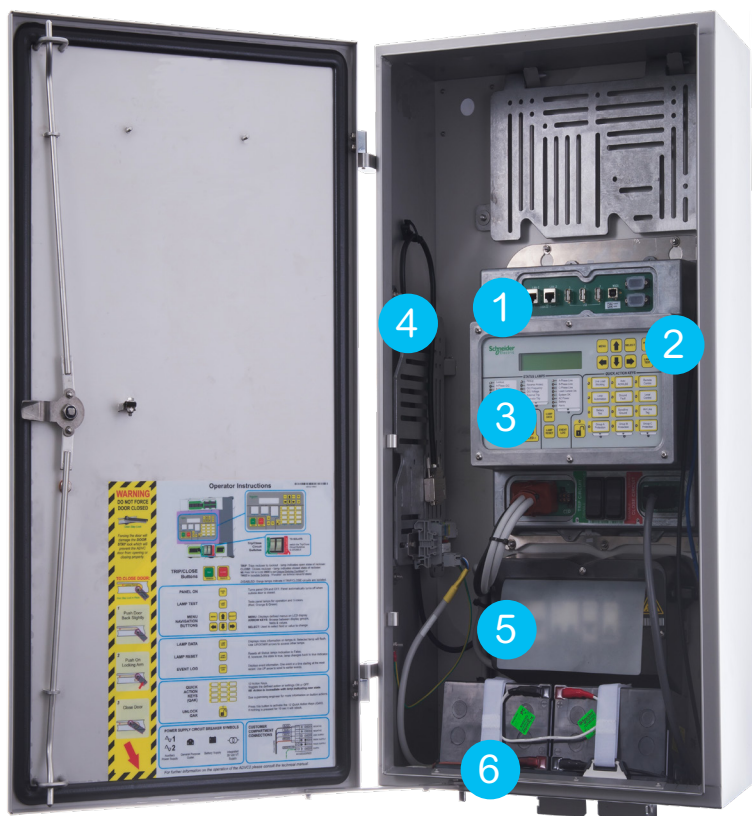
ADVC Compact - IP 54 Cubicle



Offering

- Superior Reliability and Performance
- Configurable User Interfaces
- Advanced Protection Features
- Enhanced Communications
- Analytical Tools

ADVC Ultra - IP 65 Cubicle



Ensuring Reliability

- IP 65 rated electronics enclosure
- IP rated cubicles
- Ventilation allowing natural air flow
- 3-point locking system for ADVC ULTRA
- 2-point for ADVC COMPACT

1 All-In-One CAPE

An IP65 rated CAPE (Control And Protection Enclosure) made from die cast aluminium, incorporates all the control, protection, communication and power supply functions into one reliable unit.

2 Communication Ports

Standard DB9, RJ45 and USB connections are easily accessible. There is no need for complicated customised communication cables, making installation and commissioning simple.

Note: Refer page 4 for remaining numbered annotations.

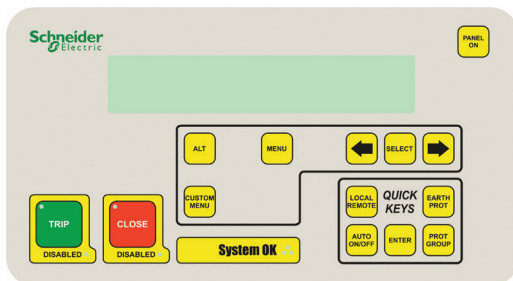
3 Customised User Interface

Mounted on the CAPE, you can choose the best Operator Interface for your needs:

- Menu driven **setVUE** Interface, or
- Fully configurable **flexVUE** interface

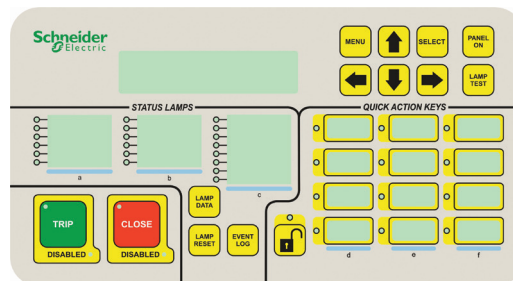
setVUE Interface

- Menu driven interface
- Large 4 x 40 character LCD Display
- 4 Configurable quick action keys
- Simple menu navigation
- Trip/Close buttons for switch control



flexVUE Interface (pictured)

- 20 configurable status lamps
- 12 configurable quick action keys
- Label inserts to identify each lamp and QAK
- 2 x 20 character LCD display
- Trip/Close buttons for switch control



4 Customer equipment expansion

Expand your ADVC Solution into a fully integrated SCADA solution by adding modems, radios, I/O expanders and other customer accessories to the detachable accessory trays.

The sturdy cast-aluminium tray can be moved from its mounting to the front of the cubicle making commissioning and installation easier. Once all the accessories are positioned, simply move the tray back into place.

The tray design caters to a wide variety of equipment and mounting configurations.

5 Extra Power

Auxiliary power, including an optional courtesy outlet, is easily accessed with a power supply unit at the base of the cubicle. Transformers, breakers and terminals are available for auxiliary power connection, and all wiring is protected by a safe IP20-rated removable cover. A silicone rain-shield also covers the miniature circuit breakers.

6 Battery Backup

Up to 46 hours* battery hold up time without power. 2 x 12 V lead-acid batteries (at base of cubicle) provide up to 5 years trouble free operation. Both controllers offer 7 Ah batteries, and the ULTRA also offers optional

12 Ah batteries for longer hold up, and heater, for operation to -40 °C.

*** With 12 Ah Batteries. Approximately 28 Hours with 7 Ah batteries**

Features

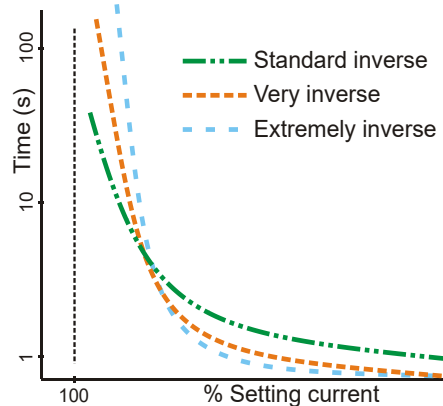
Advancing your electricity distribution network is easily accomplished with the host of ergonomic, physical, protection/detection, automation, analytical and communication features. Designed around the user, the ADVC Controller Range provides reliable and advanced protection relays/controllers for overhead network applications.

Protection Features

- Phase over current
- Earth fault
- Sensitive earth fault
- Negative phase sequence
- Directional protection
- Directional blocking
- Cold load
- Under/over voltage
- Under/over frequency
- Rate of change of frequency
- Check sync
- Neutral voltage displacement
- Inrush restraint (zero detect/2nd harmonic)
- High current lockout
- Broken conductor
- Fault locator
- Loss of phase
- Close on fault trip
- Automatic protection group selection (up to 10 configurable protection groups)

Protection Curves

- IEC 60255 curves
 - Inverse
 - Very inverse
 - Extremely inverse
- IEEE C37.112 inverse time
- Curves moderately inverse
 - Very inverse
 - Extremely inverse
- 42 Non standard inverse time curves
- Per element reset curves



Flexibility

Extended Protection Settings

Flexibility in configuring the desired action for each of the protection elements. Choose between '**Alarm**' or '**Trip**'.

| Extended Protection Settings | | | |
|------------------------------|------------------------|--|---|
| Auto Reclose | Protection | <input checked="" type="checkbox"/> On | |
| <input type="checkbox"/> On | Phase Fault Protection | <input checked="" type="checkbox"/> On | <input type="radio"/> Alarm <input checked="" type="radio"/> Trip |
| <input type="checkbox"/> Off | Earth Fault Protection | <input checked="" type="checkbox"/> On | <input type="radio"/> Alarm <input checked="" type="radio"/> Trip |
| | SEF Protection | <input checked="" type="checkbox"/> On | <input checked="" type="radio"/> Alarm <input type="radio"/> Trip |
| | SEF Alarm | <input checked="" type="checkbox"/> On | |

Per Trip Threshold

Choose between having a global threshold/current setting configuration for each protection element, or a setting per configured Trip.

Per Element Reclose Time

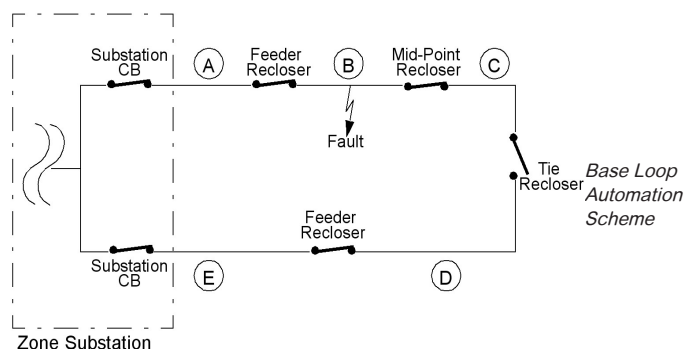
Choose between having a fixed Reclose time between each protection trip, or configure the Reclose time based on individual protection elements.

Close Block

Configure the controller to block a Close operation when the voltage or frequency are outside a configured threshold.

Automation Features

- Classic Loop Automation
- Intelligent Loop Automation
 - Peer-to-Peer communication
 - Overload Control
 - Load shed
- Auto Change Over



Measurements and Quality

- Voltage and current
- Frequency
- Real power (signed or unsigned)
- Power and power factor
- Power quality
 - Waveform capture
 - Harmonics
 - Sag and swell
- 100,000 Configurable history data
- 100,000 Events

Communications and Telemetry

- 2 x 100 Base-T
- 2 x RS 232
- 3 x USB 2.0 Type A
- 1 x USB 2.0 Type B
- Local/Remote
- DNP3
- Secure DNP3 (SAv5)
- Modbus
- IEC 60870-5-101/104
- NTP



Specifications

| Physical Specifications | COMPACT | ULTRA | LITE |
|---|-----------------------|----------------------------------|--|
| Controller weight | 30 kg | 34 kg | 34 kg |
| Cubicle height | 730 mm | 960 mm | 960 mm |
| Cubicle width | 420 mm | 450 mm | 450 mm |
| Cubicle depth | 302 mm | 302 mm | 302 mm |
| Cubicle material | 304 stainless steel | 316 stainless steel | mild steel enclosure coated with zinc rich epoxy and special powder paint system |
| Customer compartment size [mm] | 70 x 270 x 200 | 70 x 270 x 200 & 260 x 280 x 200 | 70 x 270 x 200 & 260 x 280 x 200 |
| Cubicle shell sealing | IP54 | IP65 | IP65 |
| Electronic enclosure sealing | IP65 | IP65 | IP65 |
| Wind loading resistance of structure | >160 km/hr | >160 km/hr | >160 km/hr |
| Wind loading on door when latched in open position | >60 km/hr | >60 km/hr | >60 km/hr |
| Angle of door opening | 135° | 135° | 135° |
| Operating temperature range | -10°C to 50°C | -10°C to 50°C | -10°C to 50°C |
| Extended operating temperature range with battery heater (ULTRA only) | - | -40°C to 50°C | -40°C to 50°C |
| Electronics operating temperature range | -40°C to 70°C | -40°C to 70°C | -40°C to 70°C |
| Maximum radiation | 1.1 kW/m ² | 1.1 kW/m ² | 1.1 kW/m ² |
| Humidity | 0 to 100% | 0 to 100% | 0 to 100% |

| Power Supply Specifications | COMPACT/ULTRA /LITE |
|---|---------------------|
| Auxiliary voltage input switch selectable | 115/230 VAC |
| Courtesy outlet rating | 10 A (Option) |
| Real time clock hold time | 20 days |

| Battery | COMPACT/ULTRA /LITE |
|---|--|
| Battery type (sealed lead-acid) | 2 x 12 VDC |
| Battery capacity | 7 Ah (12 Ah option on ULTRA) |
| Battery hold up time with panel off and without communications devices or heater at 25°C | 28 hours with 7 Ah (48 hours with 12 Ah) |
| Capacity available for communications hold up time (Panel off, no heater or IOEX 13.8 V TX: 2.1 A, 15 min, RX 320 mA) | 20 hours |
| Battery recharge time | |
| • 7 Ah battery from new to 80% nominal capacity | 9.5 hours |
| • 12 Ah battery from new to 80% nominal capacity | 13.5 hours |
| Battery replacement interval | 5 years (Influenced by environment) |

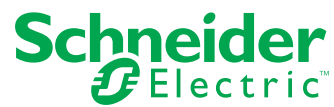
Radios or modems may be fitted for remote communications. Space, power and data interfaces are provided within the control cubicle.

| Radio/modem | COMPACT/ULTRA /LITE |
|---|--------------------------|
| Radio/modem power supply voltage | 5 - 15 VDC |
| Radio/modem power supply current | 3 A cont, 8 A peak |
| Radio/modem power supply shut-down time | 1 - 1440 mins |
| Radio/modem interface | RS232, Ethernet, USB 2.0 |

| Control Electronics | COMPACT/ULTRA /LITE |
|----------------------------------|-----------------------------|
| Continuous primary current | 800 A |
| Short time primary current | 16 kA for 3 secs, 2000:1 CT |
| Short time current recovery time | 60 secs |
| Required auxiliary supply rating | 100 VA |

| Other | COMPACT/ULTRA /LITE |
|----------|---------------------|
| Earthing | 10 mm earth stud |

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