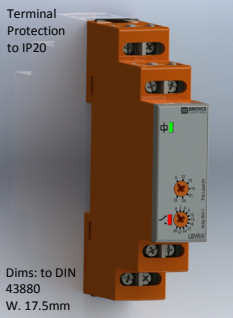


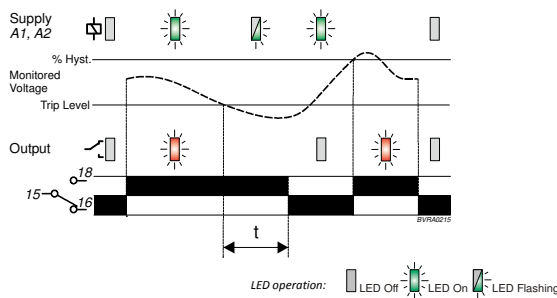


**Type: LBVR/A**  
Battery Voltage Relay



- ❑ **\*NEW\* 17.5mm DIN rail housing**
- ❑ **Microprocessor based**
- ❑ **Suited to 12V and 24V batteries**
- ❑ **Monitors own supply and detects and Under voltage condition**
- ❑ **Adjustment for Under voltage trip level (9 – 28V)**
- ❑ **Adjustment for Time delay (from an Under voltage condition)**
- ❑ **1 x SPDT relay output 8A**
- ❑ **Green LED indication for supply status**
- ❑ **Red LED indication for relay status**

• **FUNCTION DIAGRAM**





• **INSTALLATION AND SETTING**

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as required taking note of the polarity of the connections. Terminal **A1** is the positive connection and **A2** the negative.





Installation work must be carried out by qualified personnel.

**Setting the unit.**

- Set the Under voltage "Trip Level (V)"  adjustment to the voltage required.
- Set the "Delay (t)"  to minimum.

**Applying power.**


- Apply power and the green "Power supply"  and red "Relay"  LED's will illuminate, the relay will energise and contacts 15 and 18 will close. Refer to the troubleshooting table if the unit fails to operate correctly.
- If the supply voltage drops below the trip level setting, the green LED will start to flash. The relay will then de-energise (contacts 15 and 18 open) after the delay period "t" and the red LED will extinguish. The green LED will then remain permanently lit.
- When the voltage increases above the trip level + hysteresis, then relay will re-energise and red LED illuminate.

**Troubleshooting.**

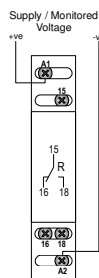
The table below shows the status of the unit during a fault condition.

Supply fault	Green LED	Red LED	Relay
No supply	Off	Off	De-energised
Under voltage condition (during timing)	Flashing	On	Energised for set delay (t)
Under voltage condition (after timing)	On	Off	De-energised

• **TECHNICAL SPECIFICATION**

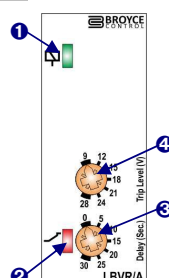
Supply/monitoring voltage	U (A1, A2): 12 – 24V DC
Supply variation:	75 – 125% U
Power consumption (max.):	3W
Monitoring mode:	Under voltage
Trip level:	9 – 28V DC
Hysteresis:	± 5% of trip level (factory set)
Setting accuracy:	± 10%
Repeat accuracy:	± 0.5% at constant conditions
Response time:	≈ 100ms
Time delay (t):	0 – 30 Sec. (± 5%) <i>Note: actual delay (t) = adjustable delay + response time</i>
Power on delay (Td):	≈ 1 sec. (worst case = Td x 2)
Power on indication:	Green LED
Relay status indication:	Red LED
Ambient temp:	-20 to +60°C
Relative humidity:	± 95%
Output (15, 16, 18):	SPDT relay
Output rating:	AC1 250V 8A (2000VA) AC15 250V 5A (nc), 3A (nc) DC1 25V 8A (200W)
Electrical life:	≥ 150,000 ops at rated load
Dielectric voltage:	2kV AC (rms) IEC 60947-1
Rated impulse withstand voltage:	4kV (1.2/50µs) IEC 60664
Housing:	Orange flame retardant UL94
Weight:	70g
Mounting option:	On to 35mm symmetric DIN rail to BS EN 60715 or direct surface mounting via 2 x M3.5 or 4BA screws using the black clips provided on the rear of the unit.
Terminal conductor size	≤ 2 x 2.5mm <sup>2</sup> solid or stranded
Approvals:	Conforms to IEC, CE,  and RoHS Compliant. EMC: Immunity/Emissions to EN 61000-6

• **CONNECTION DIAGRAM**



• **SETTING DETAILS**

1. Power supply status (Green) LED
2. Relay output status (Red) LED
3. "Delay" adjustment
4. "Under" trip level adjustment



• **DIMENSIONS**

