# EZYTrigger™

*Active trigger units for firing Power Thyristors*

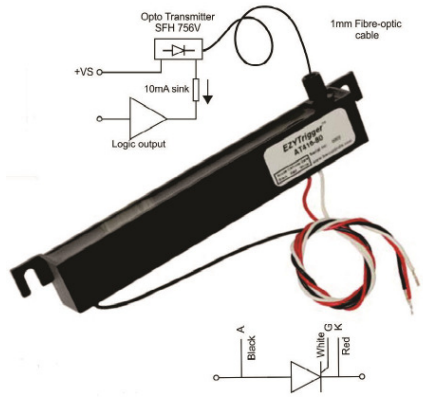
## AT 416

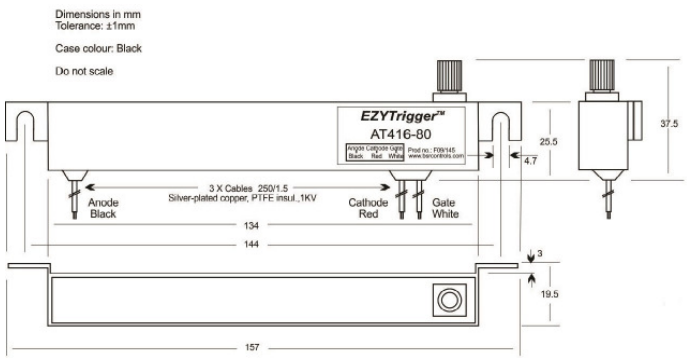
**Line voltage 1250 and 2500$V_{rms}$**

Applications:

- **The trigger signal 10mA converts high-voltage thyristors into optically controlled devices**
- **Required gate current is derived from the anode oft he thyristor via a controlled current source of 2.5A**
- **There is no need for an additional isolated power source for gate drive**

- ⇨ The unit should be mounted in close proximity to the thyristor with leads as short as possible
- ⇨ If the unit is mounted directly on the heatsink,
  it is recommended that it be positioned on the heatsink with the same potential as the cathode of the thyristor.
- ⇨ This minimizes interference from fast-rising high-voltage spikes from the mains
- ⇨ For the same reason other leads should be kept away from the body of the trigger unit.
- ⇨ It is recommended that the minimum 5mA control current be increased to 10mA to allow for ageing of the optical components
- ⇨ If simultaneous triggering is required for a number of series-connected thyristors, it is advisable to use pulse shaping for the transmitter input.
- ⇨ An RC network with a time constant of 10µs can be used to create an initial current of 20mA, decaying to 10mA.
- ⇨ It is also advisable to maintain the control signal during the required conduction period of the thyristor.




### Absolute Maximum Ratings

| Parameter | Symbol | EZYTrigger Type AT416 – 40 | AT416 – 80 |
|---|---|---|---|
| **Peak voltage – positive and negative** | **Vp** | **4000 V** | **8000 V** |
| **Nominal mains voltage** | **Vm** | **1250 V** | **2500 V** |
| **Continuous DC voltage** | **V=** | **2500 V** | **2500 V** |
| **Thyristor turn-on time ( $t_{gate-delay}$ + tr )** | **ton** | **6 µs** | **6 µs** |
| **Anode-Cathode transient immunity** | **(dv/dt)c** | **5000 V/µs** | |
| **Ambient temperature range** | **Ta** | **-20°C to +85°C** | |

### Technical Data at 25°C

| | | | |
|---|---|---|---|
| **500 mA Gate current threshold** | **Vgtl** | **40 V** | **40 V** |
| **2.5 A Gate current threshold** | **Vgth** | **90 V** | **140 V** |
| **Gate current rise time ⇨ Anode voltage ⇨ 800V** | **(di/dt)g** | **1.2 A/µs** | **1.2 A/µs** |
| **Peak gate current** | **Ip** | **2.5 A** | **2.5 A** |
| **Anode-cathode current at Vp and Ig = 0** | **In** | **4 mA** | **4.6 mA** |
| **Maximum off-state gate current** | **Io** | **2 µA** | **2 µA** |
| **Minimum control current (SFH756 Transm./ 1m fibre)** | **Icm** | **5 mA** | **5 mA** |
| **Recommended control current (SFH756 Transm./ 1m fibre)** | **Ic** | **10 mA** | **10 mA** |
| **Control input voltage drop at 10mA** | **Vin** | **Typ 1.2 < 1.5V** | **Typ 1.2 < 1.5V** |
| **Maximum reverse control input voltage** | **Vinr** | **6 V** | **6 V** |
| **Turn-on delay time at $I_{control}$ = 10mA** | **tdi** | **7 µs** | **7 µs** |

All components and parts used in these units have been certified by their manufacturers as RoHS Compliant.
Epoxy filler is RoHS Compliant (2011/65/EU) and UL Approval meets UL94 V-0.
The Optocoupler is approved for UL1577 File No. E52744 System Code H or J, Double Protection and DIN EN 60747-5-2 (VDE0884), RoHS 2002/96/EC and WEEE (2002/96/EC).
No warranty is given for the accuracy of information stated by the respective manufacturers.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