

AT416

High-Voltage Module with fibre-optic input for triggering a single thyristor

The AT 416 EZYTrigger converts high-voltage thyristors (up to 8KV) into optically controlled devices

The unit triggers with only 10mA into a fibre-optic transmitter diode

Required gate current is derived from the anode of the thyristor via a controlled current source of 2.5A

There is no need for an additional isolated power source for gate drive

APPLICATION INFORMATION

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.

Although the unit will operate successfully with the minimum control current of 5mA, it is recommended that the 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	AT416-40	AT416-80	Unit
Peak voltage - positive and negative	Vp	4000	8000	V
Nominal operating mains voltage	Vm	1250	2500	Vrms
Continuous DC voltage	V=	1250	2500	Vdc
Thyristor turn-on time (tgd+tr)	ton	6	6	µs
Anode-Cathode transient immunity	(dV/dt)c	5000	5000	V/µs
Ambient operating temperature	Ta	-20 to +85	-20 to +85	°C

TECHNICAL DATA at 25°C

500mA Gate current threshold	Vgtl	40	60	V
2.5A Gate current threshold	Vgth	90	140	V
Gate current rise time at anode voltage 800V	(di/dt)g	3	2.5	A/µs
Peak gate current	Ip	2.5	2.5	A
Anode-cathode current at Vp at Ig = 0	In	4	4.6	mA
Maximum off-state gate current	Io	2	2	µA
Minimum control current***	Icm	5	5	mA
Recommended control current***	Ic	10	10	mA
Control input voltage drop @ 10mA	Vin	typ. 1.2<1.5	typ. 1.2<1.5	V
Maximum reverse control input voltage	Vinr	6	6	V
Turn-on delay time @ Ic = 10mA	tdi	7	7	µs

***Current into SFH756 opto-transmitter with 1m cable.

Notes: 1. An external Gate/Cathode short-circuit may destroy the trigger. 2. All products conform to RoHS regulations for lea

