



UNIVERSAL PHASE ANGLE TRIGGER MODULE

AFM-11

X10221

INTRODUCTION

This single phase or phase-to-phase trigger module uses variable phase angle control with adjustable signal matching, integral current limit input and adjustable soft start. The pulse train output is reliable, powerful and universally applicable to resistive or inductive loads. The AC input supply transformer (optional extra) is remote for increased reliability and wide operational voltage capability. Adjustable current limit allows feedback control and via a few external parts, this can give voltage or speed control of AC or DC loads. The module is fully enclosed for safety and eligibility in industrial environments.

APPLICATIONS

This unit is applicable to most AC or DC, resistive or inductive loads. Typically used in complete power assemblies (known as 'stacks') for controlling thyristors, triac or hybrid diodes on single phase to neutral, or phase to phase supplies, within the line voltage limits (see *typical power connections section*).

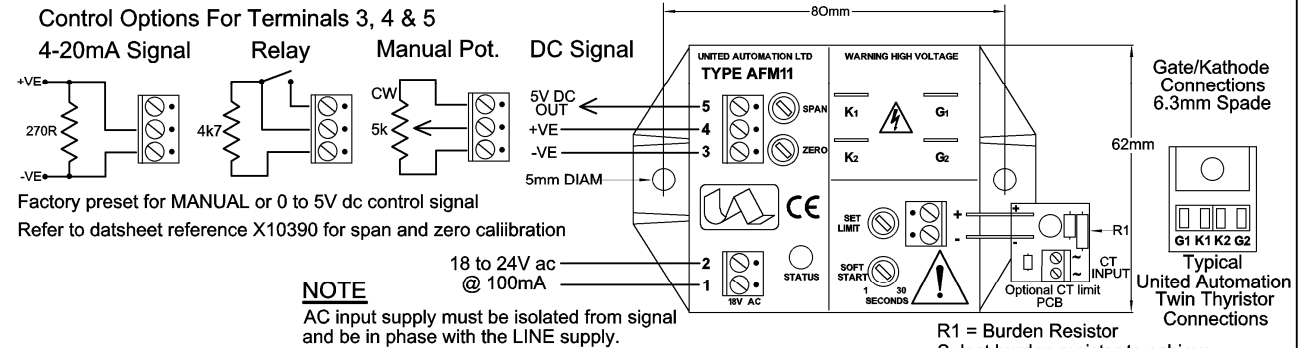
RoHS Compliant
Directive
2002/95/EC

FEATURES

- Fires triacs or thyristors up to 480V AC.
- Adjustable soft start function.
- Adjustable current limit control.
- Pulse train firing via isolation transformer.
- Consumes under 2 watts.
- Status (LED) indication



INSTALLATION

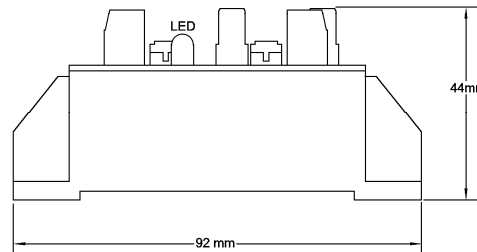
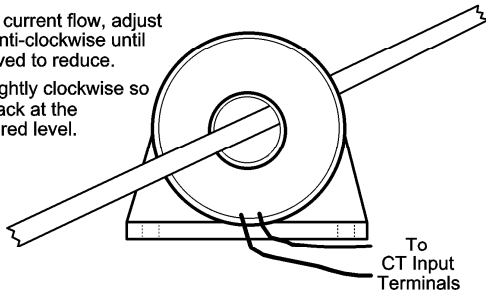


CURRENT LIMIT SET UP

1. Set LIMIT cermet fully clockwise.
2. With maximum current flow, adjust LIMIT cermet anti-clockwise until output is observed to reduce.
3. Turn cermet slightly clockwise so that output is back at the maximum required level.

OPTIONAL "CT"

If Current Limit is required

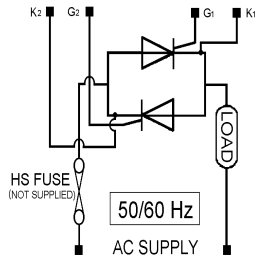


WARNING !

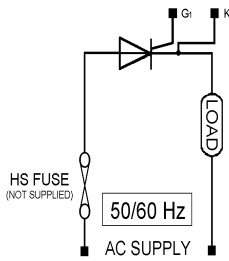
ENSURE SUPPLY IS OFF BEFORE COMMENCING ANY SERVICING WORK

POWER CONNECTIONS (typical)

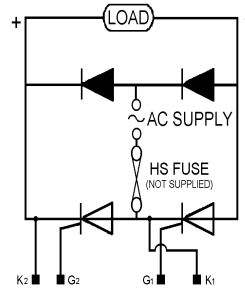
FULL WAVE THYRISTORS



HALF WAVE - THYRISTOR



DC CONTROLLED



SPECIFICATIONS

Signal Span minimum	0 to 2.5V dc (see X10390)	AC input supply (nominal)	18 to 24V AC (RMS) @ 100mA
Signal Span maximum	0 to 25V dc (see X10390)	Auxiliary output (nominal)	5V dc @ 20mA
Signal Zero offset	0 to 50% of span (see X10390)	Thyristor line voltage	12 to 480V AC (RMS) @ 50/60Hz
Signal input resistance	5000Ω ± 20%	Manual potentiometer	2KΩ, 5kΩ or 10kΩ
Trigger pulse height	8V open circuit	Limit feedback input	0.6 - 30V DC
Trigger pulse rating	250mA in to 10Ω	Soft start	(adjustable) 1-30 seconds
Trigger isolation voltage	2500V AC (RMS)	Storage temperature	0°C to +85°C
Trigger outputs (G & K)	Short circuit protected	Operating temperature	0°C to 75°C

NOTE (Limit feedback input): may be in the form of a current Transformer (CT) used with a feedback PCB [details as shown in *INSTALLATION* section] OR a Shunt used with an amplifier PCB [details not given – for information contact Technical Sales Desk]

FUSING

It is recommended that this units AC supply should be fused for safety and unit protection. An appropriate 250V ac, quick blow, glass type fuse (typically F1A glass 20mm x 5mm Ø) should be used. See the SRA Datasheet in the *RECOMMENDATIONS* section for further information.

CE MARKING

This product family carries a "CE marking". These phase angle controllers need a suitable remote filter. For additional information see the recommendation section and contact our sales desk. (See the Declaration of Conformity).

RECOMMENDATIONS

Other documents, which may be appropriate to your applications, are available on request:-

CODE	IDENTITY	DESCRIPTION
X10229	RFI	Filtering recommendations - addressing EMC Directive
X10213	ITA	Interaction, uses for phase angle and for burst fire control.
X10255	SRA	Safety requirements - addressing the Low Voltage Directive (LVD) including:- Thermal data/cooling ; "Live" parts warning & Earth requirements; Fusing recommendations.
AP02/4	COS	UAL Conditions of sale.
X10390	ZSS	For signal zero and span calibration setup and adjustment
X10389 & X10424		For current Transformer (CT) performance graph – 32A & 240A respectively.

NOTE We recommend that suitably qualified/trained personnel should do installation and maintenance of this equipment with reference to the current edition of the I.E.E. regulations BS7671. The regulations contain important requirements regarding the safety of electrical equipment. For International standards, refer to I.E.C. Directive I.E.C. 950.

ORDER CODE

State part number: AFM11

Optional extras include:

Potentiometer – for manual control; supply transformer (Tx).

Complete 'ready for use' assemblies include:

Stack assembly (SCR's/Tx/fusing/Heatsink); appropriate Filter to match load; Current Transformers (CT's); CT feedback PCB.



UNITED AUTOMATION LIMITED

Southport Business Park
Kew, Southport
PR8 4HQ
ENGLAND

Tel: 0044 (0) 1704 – 516500 Main
Tel: 0044 (0) 1704 – 516516 Sales
Fax: 0044 (0) 1704 – 516501
Enquiry@united-automation.com
www.united-automation.com
Issue 6 Date 30/05/08

