X10221 – Universal Phase Angle Trigger Module

INTRODUCTION

This single-phase or phase-to-phase trigger module uses variable phase-angle control with adjustable signal matching, 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

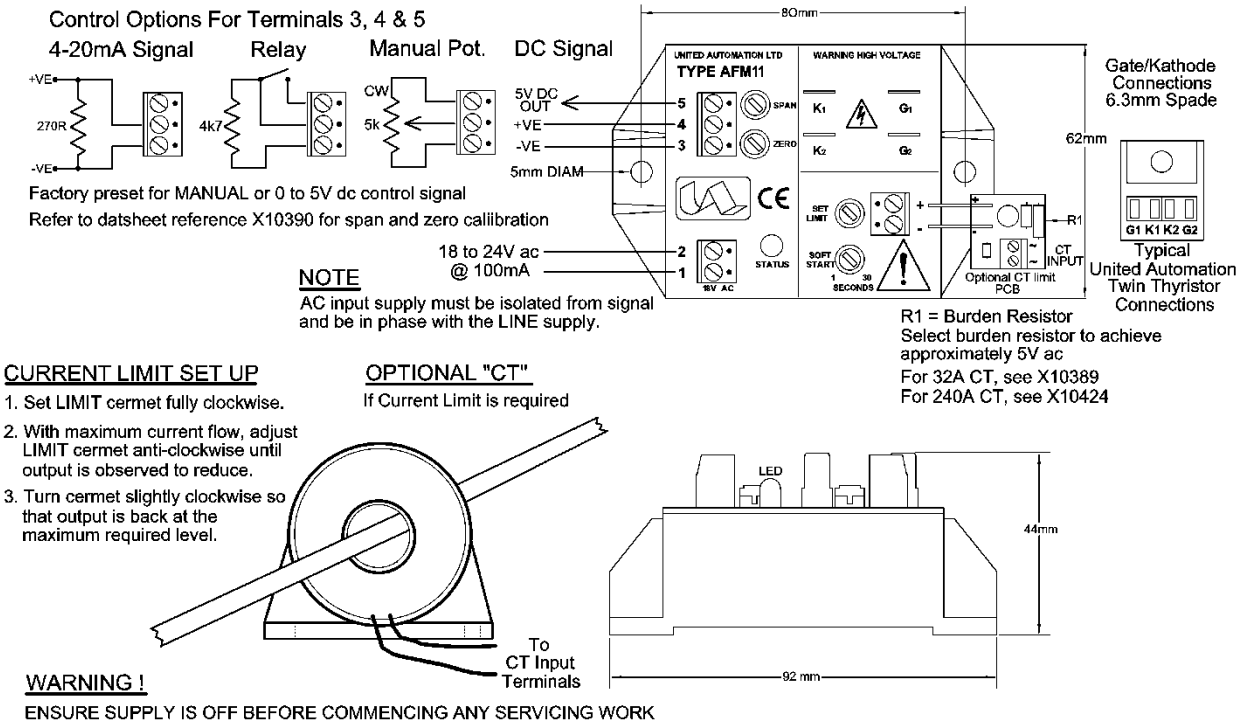
This unit is applicable to most ac or dc, resistive or inductive loads. Typically used in complete power assemblies (stacks) for controlling thyristors, triac or hybrid diodes on single-phase to neutral, or phase-to-phase supplies, within the line voltage limits (see typical power connections section).

FEATURES

- **Fires triacs or thyristors up to 480V ac.**
- **Adjustable soft-start function.**
- **Adjustable current limit control.**
- **Pulse train firing via isolation transformer.**
- **Consumes fewer than 2W.**
- **Status (LED) indication**

RoHS Compliant

INSTALLATION



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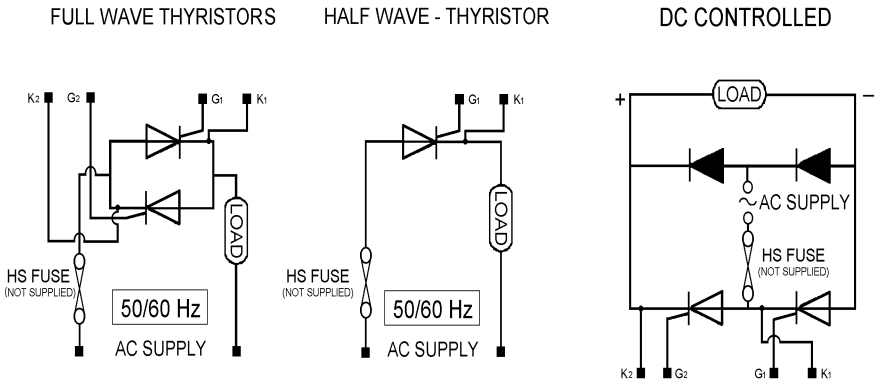
Power Connections - Typical.



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	5kΩ± 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^{O}C to +85^{O}C
Trigger outputs (G & K)	Short circuit protected	Operating temperature	0^{O}C to +75^{O}C

NOTE: Limit feedback input - may be in the form of a current transformer 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 the technical sales desk)

FUSING

It is recommended that this units ac supply should be fused for safety and unit protection. An appropriate 250V ac, fast-acting, 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 information see recommendation section and contact our sales desk (see Declaration of Conformity).

RECOMMENDATIONS

Other documents available on request, which may be appropriate for your application:-

CODE	IDENTITY	DESCRIPTION
X10229	RFI	Filter recommendations: Addressing the 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 and fusing recommendations
P01.1	COS	UAL Conditions of sale.
X10378	ILR	Inductive loads remedy sheet for use with Phase angle controllers
X10390	ZSS	For Signal zero and span calibration setup & adjustment
X10389 & X10424	For Current Transformer (CT) performance graph – 32A & 240A respectively	

NOTE: It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.T. (formally I.E.E.) regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding installation and safety of electrical equipment. Specific installers should refer to local and national regulations.

ORDER CODE State part number: **AFM11**

Optional extras include*:* Potentiometer – for manual control; supply transformer

Complete 'ready for use' assemblies include: Stack assembly (SCRs/transformer/fusing/heatsink), appropriate filter to match load, current transformers, current transformer feedback PCB.

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