

## SPECIFICATION

<b>PH1 &amp; PH2 Voltage Phase Ref. [10 &amp; 11]</b>	400V, 230V, 110V, 24V, 15V AC. (other voltages available on request)
<b>Input power supply (nominal) [1 &amp; 2]</b>	18 to 24V ac or 24V dc @ 200mA
<b>Signal span minimum</b>	0-4V dc
<b>Signal span maximum</b>	0-25V dc
<b>Signal zero offset</b>	+60% and -40% of Span
<b>Manual potentiometer</b>	1K $\Omega$ , 5k $\Omega$ or 10k $\Omega$
<b>Signal input resistance</b>	5k $\Omega$ ("V" Signal), 250 $\Omega$ ("mA" Signal) $\pm$ 10%
<b>Limit feedback input</b>	3 - 25V dc
<b>Soft start</b>	0-30 seconds (adjustable)
<b>Thyristor (SCR) line voltage</b>	See Order Details
<b>Trigger pulse height</b>	8V dc open circuit
<b>Trigger isolation voltage</b>	2500V ac (RMS)
<b>Trigger pulse rating</b>	250mA in to 10 $\Omega$
<b>Storage temperature</b>	0°C to +65°C
<b>Max unit operating temperature</b>	70°C
<b>Dimensions (Inc DIN Enclosure)</b>	122mm (D) by 70mm (H) by 56mm (W)

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

## INSTALLATION

**For CT Information see Datasheets X10391 (32A) and X10424 (240A)**

### Connections

This unit has simple 2.5mm clamp type terminal connectors for all input wiring requirements and 6.3mm AMP Tags for the Gate/cathode (G/K) connections.

### Fastening

The unit is secured by DIN-rail mounting feet for quick installation/removal.

### Fusing

See SRA Data sheet X10255 for further information. Other external supplies should be fused accordingly.

### CE Marking

This product family carries a "CE" marking. When using in phase angle option, a suitable remote filter will be required. For more information, contact our sales desk. A Declaration of Conformity is available on request.

## ORDER DETAILS

## STOCK CODES (samples)

DMFC12 – (PH1 & PH2 Voltage)	A34537 - 110V ac	A34540 - 24V ac
	A34534 - 230V ac	A34542 - 15V ac
	A34535 - 400V ac	

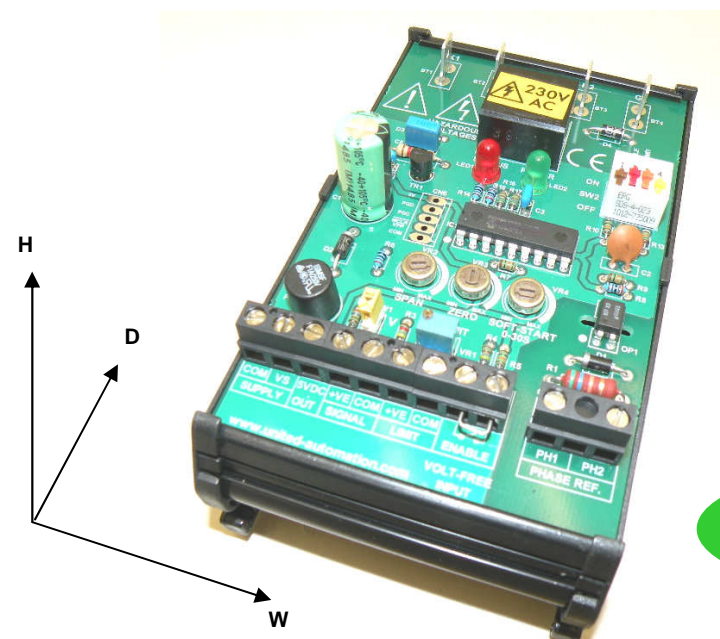
Other Line Voltages available on request: Please contact our sales desk.

DMFC12

DMFC12

## DUAL MODE FIRING CIRCUIT C/W SOFT START AND CURRENT LIMIT

X20035



RoHS Compliant  
Directive  
2002/95/EC

## Dual-Mode Firing Circuit (DMFC12) Features

- Standard Din Rail mount
- Phase angle and burst fire modes of control
- Soft-start (0-30s)
- Current limit (using external CT/Hall-effect device or shunt with amplification)
- Enable input (volt-free)
- 0-5V/0-10V, 0-20mA/4-20mA or potentiometer input signal
- 24Vdc or 18-24Vac supply
- Output power span and zero adjustment
- Frequency tracking (4Hz – 400Hz)
- Pulse transformer output
- Power and status LEDs

CE

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### Power Supply Terminals (1 & 2)

The DMFC12 accepts an 18-24V AC or 24V DC supply. This would be polarity sensitive when using a DC supply i.e. terminal 1 negative and 2 positive.

### PH1 & PH2 Phase Reference Terminals (10 & 11)

See **POWER CONNECTIONS** (opposite) for typical wiring circuits. The connections made to the Phase ref. terminal are dependent on which circuit is being applied.

F1A fusing should be fitted as appropriate (as shown opposite), e.g. for single phase (230V & 110V and lower - fuse the LIVE; for two phase 400V - fuse both PHASES.

### Power Output Modes

**These Modes must be set before power up.**

The DMFC12 can be configured to operate in burst fire, phase angle or dual output modes. The burst fire time base is 1 second. The soft start feature only works in phase angle mode and can be set between 0 (disabled) and 30 seconds. In dual mode, the DMFC12 soft starts in phase angle mode then switches to burst fire mode. The output modes are selected via the 4-way switch SW2.

Burst Fire Only – BROWN (No.1) switch set to 'ON', RED switch set to 'OFF'

Phase Angle Only – RED (No.2) switch set to 'ON', BROWN switch set to 'OFF'

Dual Mode – Both BROWN and RED switches set to 'ON'

### Input Signal Terminals (3, 4 & 5)

The DMFC12 supports input signals in the range of 0-30Vdc and 0-20mA. This includes industry-standard signals of 0-5V, 0-10V and 4-20mA. Also, a 5Vdc output is provided to allow a potentiometer to be connected directly to the DMFC12. The 'SPAN' (VR2) and 'ZERO' (VR3) cermets provide the facility to scale the input signal [See **Typical Control Options** section with SPAN and ZERO settings]. Switch SW1 sets the source of the input signal to voltage (V) or current (I).

### Current Limit Terminals (6 & 7)

The DMFC12 includes a current limit selected by SW2 DIL switch with ORANGE (No.3) in the 'ON' position. This feature prevents the load current from exceeding a pre-defined value. The unit accepts a D.C. voltage feedback signal which can be scaled via the on-board 'SET LIMIT' multi-turn preset (VR1). The feedback signal is continuously compared to a 2.5V internal reference: reducing the output voltage when the magnitude of the feedback signal rises above it.

### Enable Input Terminal (8 & 9)

A 'volts free' enable input allows the DMFC12 to be controlled externally. If configured, a 'soft start' occurs each time the DMFC12 is enabled.

### Soft Start Adjustment

The 'soft start' ramps up power to the signal setting over the same proportion of time period selected by 'SOFT START' cermet (VR4). e.g. If the soft start is set for 30 seconds and the signal input is 50%, then the output will ramp up to 50% in 15 seconds.

### Span and Zero Adjustment

The Span and Zero cermets (VR2 & VR3) allow the user to set the minimum and maximum output voltage in relation to the input signal range [see **Typical Control Options**].

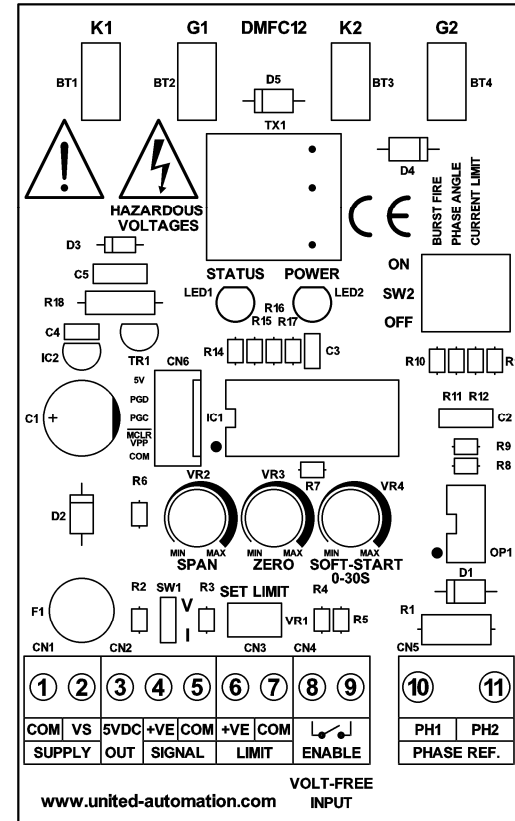
### LED Indicators

The DMFC12 has two LED indicators. The green 'Power' LED2 is lit when power is supplied to the DMFC12. The red 'Status' LED1 represents the current output power and its intensity will vary for phase angle mode and flash on a 1-second time-base for burst fire mode. The red 'Status' LED1 also flashes rapidly when the phase reference signal is not present.

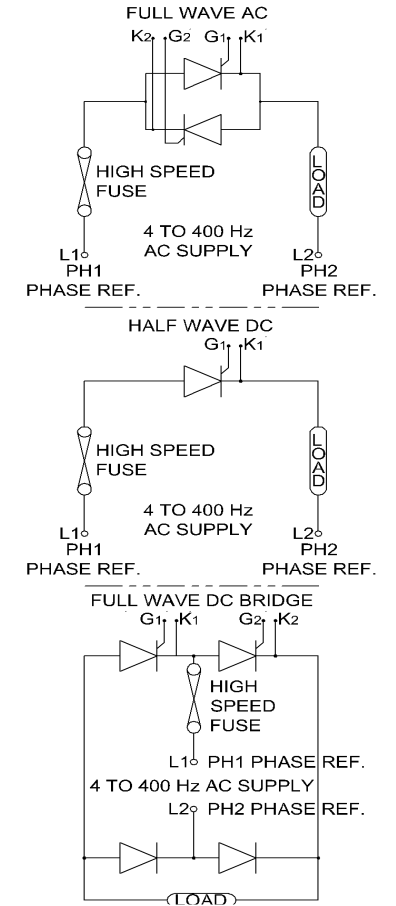
### Variable or Fixed Line Frequency

The DMFC12 is capable of providing power control with line voltages of fixed or varying frequencies from 4Hz to 400Hz by continually measuring the duration of each a.c. half-cycle and

## TERMINAL CONNECTIONS

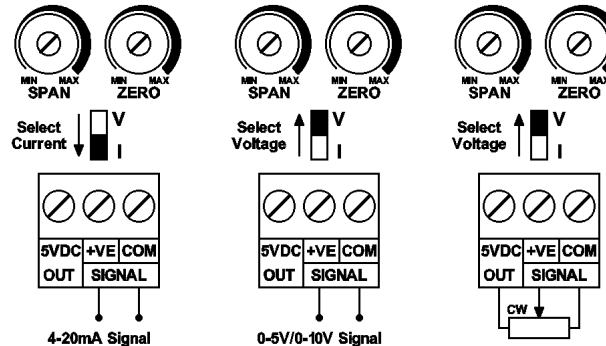


## POWER CONNECTIONS



## Typical Control Options

Adjust SPAN and ZERO to set the Maximum and Minimum Output Respectively



## SAFETY RECOMMENDATIONS Installation

It is recommended that installation and maintenance of this equipment should be carried out by suitably qualified/trained personnel with reference to the current edition of the I.E.E. wiring regulations (BS7671)

The regulations contain important requirements regarding the safety of electrical equipment. For International Standards refer to I.E.C/ Directive IEC 950.

## Warning

1. LIVE terminals – Isolate supply before commencing any installation work.
2. Unit must be secured on DIN rail using the DIN-Housing Supplied.