

# VMX-PFE™

Compact Soft Starter

Low Voltage  
Soft Starters

The cost effective  
starter for small AC  
induction motors



1-41 A\*

\*For larger motor sizes contact your local distributor.

 **MOTORTRONICS™**  
Solid State AC Motor Control

# VMX-PFE™

Compact Soft Starter



Control of  
single or  
three phase  
motors



Internally  
Bypassed



**3S**  
Technology

The VMX-PFE™ is an innovative development from Motortronics, who have 30 years of experience producing innovative designs in the soft start market

> With ratings from 1.1 kW to 22 kW, the VMX-PFE™ is ideally placed to support any AC induction motors in use today. This makes the VMX-PFE™ the natural choice for distributors and customers alike.

Benefitting from Motortronics' excellence in engineering, the VMX-PFE™ combines the quality and reliability you have come to expect. This is one product that ticks all the boxes.

### Frequent Number of Starts

Optional cooling fan for frequent duty applications up to 30 starts/stops per hour Class 10 and 60 starts/stops per hour Class 2.

### Internal Bypass

When bypassed there are no harmful harmonics which can reduce the performance and reliability of other equipment connected to the grid. Space is saved due to the compact design and cost saved as there is no need for extra filters, chokes and screened cables.

### Over Current Protected

Protects the soft starter against use above its duty rating.

### 45mm Wide (Size 1)

Same width as typical existing control gear for easy connectability and enables a more compact cabinet to be used.

### DIN Rail Mounted

For easy installation – it just clips on.

### 3S Technology

Automatic ramp control profiles ensure smooth start and stop performance, delivering stable acceleration and deceleration in all operating conditions.

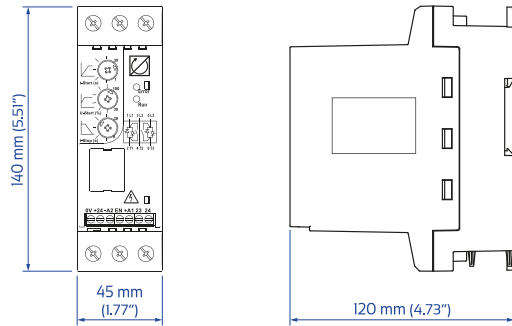
3S Technology allows a 30 second soft start and a 30 second soft stop time, which other systems cannot achieve. Thus the VMX-PFE™ can attain a Trip Class 30 start duty rating for the heavier duty starting applications.

### Control of Single Phase Motors

The VMX-PFE™ soft starter may be used with both Three Phase and Single Phase motors – adjustment via a jumper.

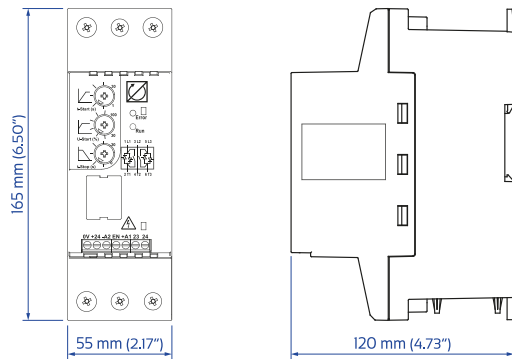
## Dimensions

### Size 1 VMX-PFE-02 to VMX-PFE-10



Weight = 400 g (0.88 lbs)

### Size 2 VMX-PFE-12 to VMX-PFE-18



Weight = 650 g (1.32 lbs)

## Sizing Guide

For application specific sizing, use the online Soft Starter Selector: [www.motortronics-uk.co.uk](http://www.motortronics-uk.co.uk)

| Motor Rating       |      |                    |     | Trip Class 2   | Trip Class 10  |
|--------------------|------|--------------------|-----|--|--|
| 400 V              |      | 460 V              |     | I <sub>e</sub> : AC-53b:<br>3-5: 355<br>10 starts/hour | I <sub>e</sub> : AC-53b:<br>3-23: 697<br>5 starts/hour |
| I <sub>e</sub> (A) | kW   | I <sub>e</sub> (A) | HP  |  |  |
| 2.7                | 1.1  | 3                  | 1.5 | VMX-PFE-02   | VMX-PFE-02   |
| 3.6                | 1.5  | 3.4                | 2   | VMX-PFE-02   | VMX-PFE-04   |
| 4.9                | 2.2  | 4.8                | 3   | VMX-PFE-02   | VMX-PFE-06   |
| 6.5                | 3    | 4.8                | 3   | VMX-PFE-04   | VMX-PFE-08   |
| 8.5                | 4    | 7.6                | 5   | VMX-PFE-06   | VMX-PFE-10   |
| 11.5               | 5.5  | 11                 | 7.5 | VMX-PFE-08   | VMX-PFE-12   |
| 15.5               | 7.5  | 14                 | 10  | VMX-PFE-10   | VMX-PFE-16   |
| 22                 | 11   | 21                 | 15  | VMX-PFE-12   | VMX-PFE-18   |
| 29                 | 15   | 27                 | 20  | VMX-PFE-14   | VMX-PFE-18 + FAN                                       |
| 35                 | 18.5 | 34                 | 25  | VMX-PFE-16   | -  |
| 41                 | 22   | 40                 | 30  | VMX-PFE-18   | -  |

## Specification

|                                   |  |
|-----------------------------------|--|
| <b>Operational Voltage</b>        | 230–460 VAC rms 3-Phase (-15% +10%)  |
| <b>Rated Frequency</b>            | 50–60 Hz ± 2 Hz  |
| <b>Index Rating</b>               | Class 2 AC53b: 3-5: 355<br>Class 10 AC53b: 3-23: 697   |
| <b>Starts per Hour</b>            | Up to total of 5 starts/stops per hour Class 10 and 10 start/stops per Class 2   |
| <b>Optimum Starts per Hour</b>    | Up to 30 starts per hour with optional fan Class 10 and 60 starts per hour Class 2   |
| <b>Internally Bypassed</b>        | Yes  |
| <b>Control Supply</b>             | 24 VDC approx. 4 VA supplied externally to terminals 0 V +24 V   |
| <b>Enable and Start/Soft Stop</b> | 24 VDC galvanically isolated terminals -A2, EN, +A1  |
| <b>Indication</b>                 | Multifunction LEDs on front panel  |
| <b>Start Time</b>                 | 1 to 30 seconds  |
| <b>Stop Time</b>                  | 0 to 30 seconds  |
| <b>Start Duty</b>                 | 3 × FLC for 23 seconds at Trip Class 10 rating   |
| <b>Power Terminals</b>            | Input 1/L1, 3/L2 & 5/L3<br>Output 2/T1, 4/T2, 6/T3<br>IP20 rated wire clamping terminals (unit is IP20)                                      |
| <b>IP/NEMA Rating</b>             | IP20, NEMA 1   |
| <b>Ambient Temperature</b>        | 0 °C to 40 °C<br>Above 40 °C de-rate linearly by 2% of unit FLC per °C to a de-rate of 40% at 60 °C  |
| <b>Transport and Storage</b>      | -25 °C to 60 °C<br>-25 °C to 75 °C (not exceeding 24 hours)  |
| <b>Altitude</b>                   | 1,000 m<br>Above 1,000 m de-rate linearly by 1% of unit FLC per 100 m to a maximum altitude of 2,000 m<br>Above 2,000 m contact Motortronics |
| <b>Humidity</b>                   | Max. 85% non-condensing, not exceeding 50% at 40 °C  |
| <b>Standards</b>                  | IEC 60947-4-2; EN 60947-4-2 "AC Semiconductor Motor Controllers and Starters" UL & CE  |

For single phase sizing contact your local distributor

# VMX-PFE™

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## Case Study



The VMX-PFE™ range has been successfully used in many applications. A good example of its versatility is in the following case study of an unloading winch and davit in a large commercial port.

The winch is used for unloading 500 kg fish/scallop boxes from vessel to shore and a smoother start/stop was required to alleviate 'jarring' which was becoming a problem. A VMX-PFE-08 3 kW soft start with fan was chosen to increase the number of start/stops per hour as the trawler can be 5/8 meters below dock level and jogging is used to position the lifting gear under the skippers instructions. Due to the success of the installation another four systems have been installed.

Dockside Davit designed and built by Spencer Carter Ltd, Falmouth, Cornwall.  
[www.spencercarter.com](http://www.spencercarter.com)

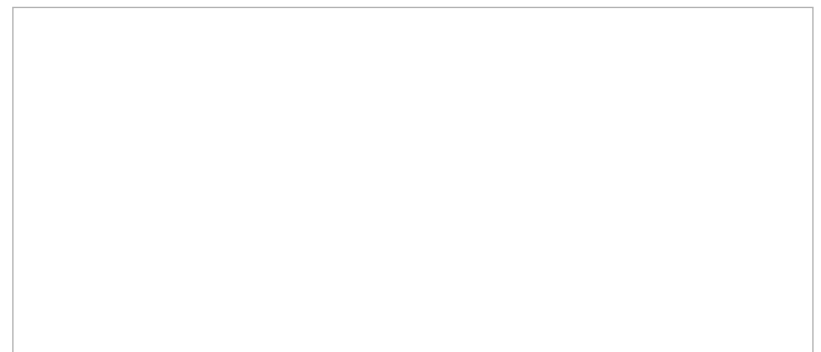
## Product Options

- VMX-PFE-031** External Fan for VMX-PFE-02 to 10
- VMX-PFE-032** External Fan for VMX-PFE-12 to 18
- VMX-PFE-035** Power Supply 100/230VAC to 24VDC for PFE-02 to 18
- VMX-PFE-036** Power Supply 100/230VAC to 24VDC PFE-02 to 18 for multiple PFE's



For more information on the VMX-PFE™ contact your local distributor

+ 44 (0)1752 894554  
[www.motortronics-uk.co.uk](http://www.motortronics-uk.co.uk)



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