

# POWER CONTROL WITH OVERCURRENT FAULT PROTECTION



# GEFRAN

# GEFRAN Xtra POWER CONTROL

## ALL-ROUND PROTECTION, ALL THE TIME



### MAXIMISING YOUR OUTPUT

Gefran's solutions can help maintain your plant's uptime, increasing productivity, reducing costs and, ultimately, maximising profits. With the **Gefran Xtra power control** integrated into your Gefran power controllers, you will benefit from fewer unplanned stoppages and more output.

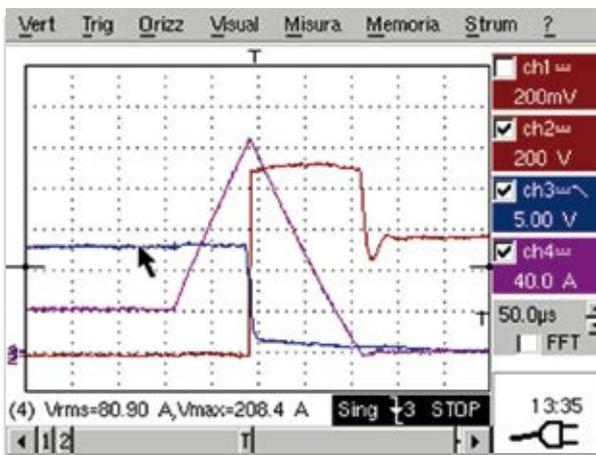
### EASY TO INSTALL, AND MAINTENANCE FREE

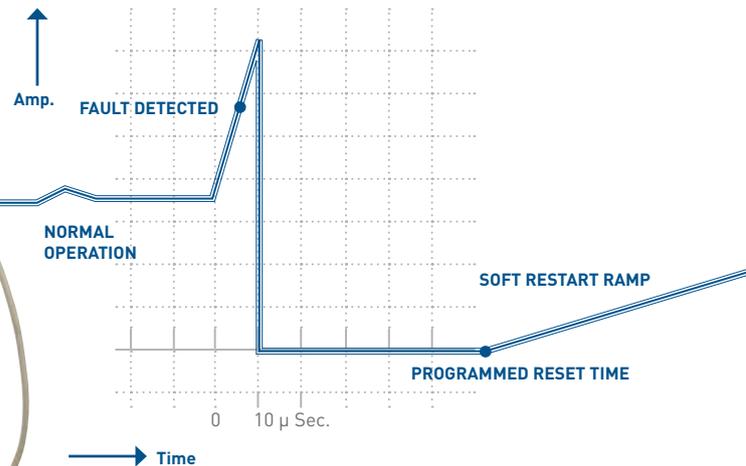
Gefran equipment is designed to improve your plant's performance, and our professionals can help select, install and configure devices that will make a real difference. The **Gefran Xtra power control** can be simply installed without additional wiring, and is virtually maintenance-free.

Even after operating, it can be manually reset at the touch of a button, remotely using fieldbus, or automatically following a predetermined interval, depending on the installation.

### GEFRAN – GLOBAL SUPPORT FROM A WORLD LEADER

With subsidiaries in every major market and over 80 specialist distributors worldwide, Gefran offers on-the-spot global support to customers and end-users.





## A SIMPLE SOLUTION TO COMPLEX ISSUES

Like many great product concepts, the **Gefran Xtra power control** is very simple. An integral part of the Gefran power controller, it intelligently and continuously monitors the power supply, and reacts to high loads or short circuits by opening the power junction, safely interrupting the electrical current. By reacting immediately, it helps to prevent significant damage to process equipment or products.

There is no ruptured fuse to find and replace, no switched circuit-breaker to reset. Instead, the **Gefran Xtra power control** puts the system into waiting mode to enable either manual reset (local or remote) or automatic (timed delay) reconnection. Current restoration is a soft-start ramp that tests for permanent short circuits, and signals an alarm to enable critical maintenance if necessary.

### ULTRA-FAST FAULT CURRENT PROTECTION, REAL AND DEFINABLE BENEFITS

- Fast, reliable and safe protection for critical heating processes
- Prevents excessive fault current from damaging sensitive process-heating equipment
- Automatic, continuous, unbroken and repeatable protection
- No need to store, find and replace fuses or reset circuit-breakers
- More uptime, less wastage, increased productivity
- Simple to reset without special training or equipment
- Automatic reset after temporary short circuit to maintain production

The **Gefran Xtra power control** delivers:

- the **consistent power** control that's **vital to achieve optimum production**;
- **increased productivity** by automatically recovering from intermittent over-current conditions;
- **cost savings**, by eliminating the need to stock and replace ultra-rapid I<sup>2</sup>T fuses.

## MORE UPTIME, LOWER RUNNING COSTS - INCREASED PROFITABILITY

- **Cuts costs, reduces wastage**
- **Maintains productivity**
- **Easy to install and maintenance free**
- **Fully automatic operation**
- **Prevents catastrophic production failure**

In every industrial process, the key to profitability is maximum uptime: any interruption to production can be a problem. But in processes that depend on continuous throughput using high-power electrical heating, even a short outage can have disastrous consequences, including serious loss of output, costly wastage, quality problems and damaged peripheral equipment. In applications like these the Gefran Xtra power control (European Patent Nr° 2660843) will help maintain production, reduce downtime and improve profitability.

The **Gefran Xtra power control** provides automatic overload monitoring and protection on key electrical heating circuits, continually and intelligently assessing current load conditions, interrupting the circuit if the current load reaches a pre-set threshold and before overloads cause production problems. In applications prone to intermittent short-circuit conditions, the **Gefran Xtra power control** can be set-up to restore the circuit automatically, effectively maintaining production and preventing a complete process shutdown. The reset time and frequency can be pre-programmed on the device, according to the application.



# GEFRAN Xtra POWER CONTROL IN ACTION

**Gefran Xtra power control provides reliable automatic overload protection in a wide variety of installations** where intermittent **insulation loss, current spikes** and **operator errors** can lead to over-current and short-circuit faults.

The Gefran Xtra power control also **guards against human errors** such as incorrect wiring, circuit overload and fitting incorrectly rated fuses. All of these issues can cause production-line failure, with resultant loss of product, damage to equipment, or waste of valuable materials.

In all these applications – and similar ones – **Gefran Xtra power control will interrupt the power supply instantaneously, and in a controlled manner, to prevent the inevitable and irreparable damage to products that would result from a full and uncontrolled shut-down.**

This protects processes and products, as well as related equipment such as cabling, switches, transformers and processors. The power controller can be reset automatically, manually using a push-button on the controller, or remotely. And with automatic reset, the power can be fully restored after a predetermined interval – within a couple of seconds – with a controlled soft ramp restart to prevent damage if the fault persists.

## VACUUM HEAT TREATMENT FURNACE

Inside vacuum furnaces – where temperatures of 1100°C-1500°C or more are used for hardening, tempering, sintering, brazing etc. – conductive dust from heating elements can lead to temporary short-circuits.



## GAS-NITRIDING PIT FURNACES

Surface wear in the pit ovens commonly used for gas-nitriding creates conductive carbon dust which often causes heating-element short circuits.

These shorts are intermittent, but in ovens where the power supply has replaceable fuses, the process will stop until the fuse is replaced or the circuit-breaker reset, resulting in damage to the product being heat-treated.



## HOLLOW LABORATORY GLASS PRODUCTION

Pharmaceutical hollow glass tubes are made using oxy-fuel combustion, with an electric booster, to achieve temperatures in excess of 1600°C. Electrical resistance variations in the molten glass can cause the load current to occasionally spike above safety limits. A production line protected by I<sup>2</sup>T fuses will shut down automatically if this happens.



## BLOW-MOULDING CONTAINER PRODUCTION

On blow-moulding machines, the blade used to cut and close the laminated blow-formed containers must be heated rapidly to very high temperatures, usually with a TRS transformer generating a high current through a voltage regulator. Occasional contact between the exposed heat cutting blades and the press frame will cause a momentary short circuit, and if this happens the current must be switched off immediately to prevent dangerous transformer saturation.



# PRODUCT FEATURES

	SERIES	
	GTF - Xtra	GFW - Xtra
<i>Digital control</i>	X	X
<i>Analogue control</i>	X	X
<i>Potentiometer control</i>	X	X
<i>Fieldbus input control</i>	X (Modbus)	X
<i>Zero crossing control</i>	X	X
<i>Single cycle and half single cycle control</i>	X	X
<i>Phase angle control</i>	X	X
<i>Solutions up to 60A</i>	X	X
<i>Solutions up to 100A</i>	-	X
<i>Line voltage 480 Vca</i>	X	X
<i>Three-phase configurations</i>	-	X
<i>Heater Break (partial and total)</i>	X	Optional
<i>Soft start, current limit, feedback of V, V<sup>2</sup>, I, I<sup>2</sup>, P</i>	Optional	Optional
<i>Internal PID controller</i>	-	Optional
<i>Overcurrent fault protection</i>	X	X
<i>Fieldbus</i>	X (Modbus)	X

## GTF - Xtra

### Single channel solid state power unit

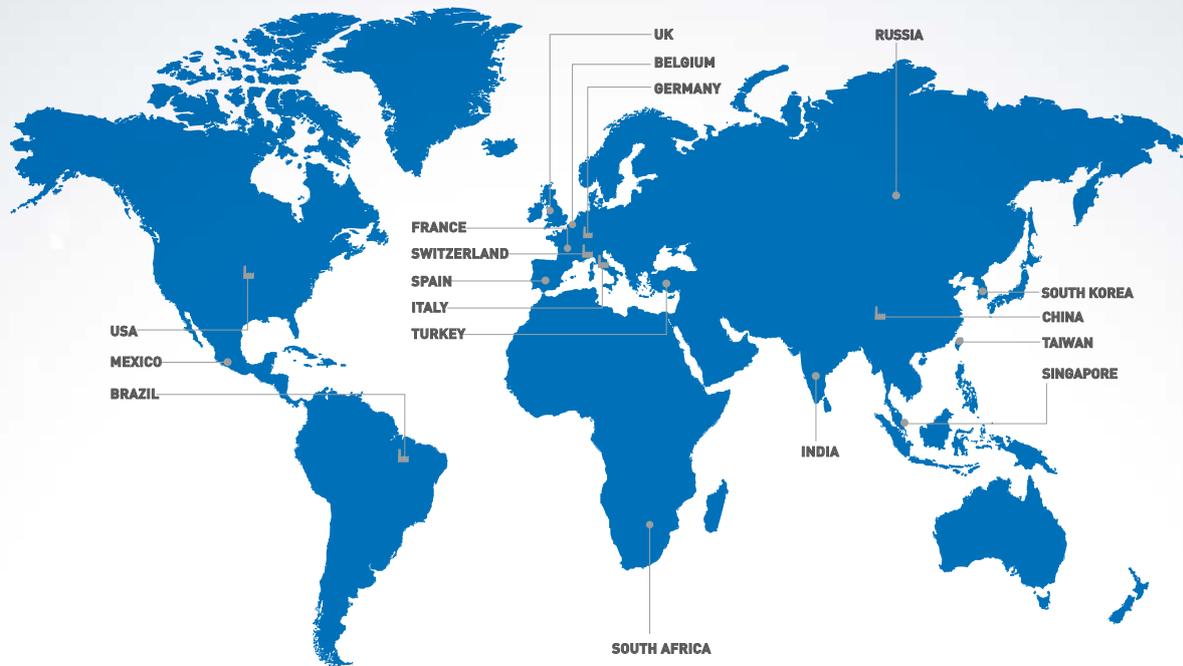
- Digital signals, analogue signals, potentiometers, serial communication input controls
- Enhanced lamp detection with high resolution

## GFW - Xtra

### Single-/bi-/tri-phase modular single channel static power regulator

- Digital signals, analogue signals, potentiometers, serial communication and Fieldbus input controls
- PID controller (optional)





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