EK-SYSTEMS INC

1485 G. LANDMEIER RD
ELK GROVE VILLAGE, IL 60007
PH: 847-981-0003   FAX: 847-981-9333

3000
Series controllers

imagine making the
impossible possible

www.ek-systems.com   **email: ek-systems@juno.com**

EK-SYSTEMS INC

1485 G. LANDMEIER RD
ELK GROVE VILLAGE, IL 60007
PH: 847-981-0003   FAX: 847-981-9333

From the simplest needs...

Simply imagine process excellence… and with Eurotherm you will achieve it. Our ranges of controllers provide world class control and versatility with clear, user friendly, operator interfaces. Add to this, a strong sales team of qualified engineers who understand your process, an absolute commitment to innovation by continuously re-investing in research and development; we can and do imagine making the impossible possible for our customers.

The latest range of controllers from Eurotherm provide our world class excellence in control with clear, user friendly operator interfaces. Quick start codes; automatic help text; custom text messages, and an auto-tune that really works ensures the 3200 range makes high performance control simple to implement and easy to operate.

With the emphasis being on simplicity and available in four standard formats, the 3200 range provides precise temperature control with a host of options. A simple 'QuickStart' code is used to configure all of the essential functions required to control your process and, if preferred,

this can be preset by Eurotherm to your requirements. When accessing the controller HMI you will find that every parameter is accompanied by a scrolling text message to describe its function.

The 3200 has a host of advanced features including heater failure detection, timer, setpoint programmer and a recipe feature that is unique in this class of product. All of these features can be configured with an extremely simple to use PC wizard configuration tool. Configurations can be saved to file and reused or modified to suit other applications in the future.

Easy to use

Fast initial set-up using QuickStart code
– *Enabling 'out of box' operation*

Expert configuration by PC wizard
– *On-line help explains each step*

Recipes can be selected from operator interface
– *Easy to adapt for differing process needs*

Internal timer and setpoint programming
– *Suitable for simple time based profiling applications*

Communications
– *Integration with PLCs and PCs using Modbus protocol*

Quick and easy commissioning with one shot auto-tuning
– *No need for expert control knowledge*

Easy, comprehensive operator information with custom messages
– *Provides clear information of plant conditions with scrolling text*

Clear alarm information
– *Custom alarm messages that operators understand*

Heater failure detection and integral ammeter display
Instant indication of heater faults with indication of measured current

Analogue remote setpoint
*Economical solution for multi-zone applications*

www.ek-systems.com   **email: ek-systems@juno.com**

EK-SYSTEMS INC

**1485 G. LANDMEIER RD
ELK GROVE VILLAGE, IL 60007
PH: 847-981-0003 FAX: 847-981-9333**

...to powerful, advanced control

The 3508 and 3504 offer much more than temperature control – advanced features and options make them capable of small machine control. They provide flexible I/O options to control and measure a multitude of processes – temperature, potential, humidity, flow, pressure, level, viscosity, additive dosing and many more. Specialist function blocks, recipe selection, setpoint programmers, maths, logic, timer functions and flexible communication options are just a few examples of what makes these instruments a key part of a total process solution.
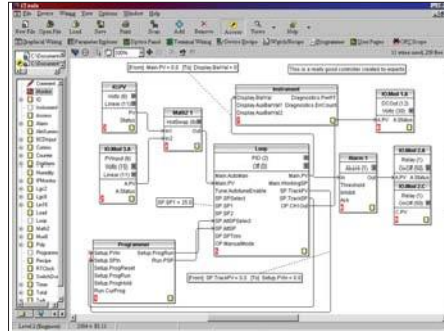
Technology so powerful it's simple

Dual loop
– *Ideal for controlling processes with two interactive variables*

Precision PV measurement combined with high performance control
– *Repeatable performance yielding consistently high product quality*

Flexible units with input and output modularity - up to 6 I/O slots with 15 different module types
– *Limited stock holding of same basic unit can be adapted to many different applications*

QuickStart HMI configures simple applications in minutes
– *Faster than it takes for a PC to boot-up. Ideal for replacement of older Eurotherm products such as 818 and 902*

Advanced features
– *A host of maths, logic and timing features along with zirconia and humidity function blocks offer the ability to develop custom solutions and small machine controllers*

OEM Security protects intellectual property
– *Prevent unauthorised copying of configurations*

A Graphical Wiring Editor makes easy work of creating flexible solutions
– *Minimum training required. Easy to document and understand applications*

Easy system integration with standard industry protocols – Modbus RTU, Modbus TCP, Profibus and DeviceNet®

– *Simple to integrate to SCADA and programmable logic controllers without expert knowledge of communication protocols*

Simple and intuitive operation

– *Customisable displays to clearly show the process information you need*

Flexible Setpoint Programming with dual channel capability

– *Up to 50 time based programs can be stored. Programs can be also be created using a PC tool then downloaded to the controller*

www.ek-systems.com   email: ek-systems@juno.com

Products designed for ease of use

As well as precision PID control from the World's leading supplier, the 3000 Series controllers offer a host of features that make the units easy to use and configure to save you time and money.

QuickStart code

A simple 10 digit code can be used to set up all of the essential 3200 functions to control your process.
If you specify this code at point of order your controller will arrive pre-configured.

Configuration Wizard

Within the supporting PC based software, iTools, are configuration Wizards. These Wizards will guide you through the configuration process with interactive help and graphical demonstration of configuration options.

QuickStart HMI

Eurotherm have designed a QuickStart HMI Wizard for all of the 3500 Range controllers. In just a couple of minutes the controller can be ready for use as the wizard leads the user through all of the basic set-up via the instrument HMI. There is no need for additional tools, PCs or even an extensive knowledge of control.

Informative displays

All of the 3000 Series displays provide clear messages and data to ensure operators get the information they need about the plant conditions. They provide, clear, complete text information with a custom message facility – (the 3200 uses scrolling text to maximise clarity for operators) – along with help text for each controller function. The 3508 and 3504 also have user-defined displays to offer views onto

Heater failure detection

the process that are best suited to the operation of the plant.
The 3200 range can accommodate a   current transformer input that can be used to monitor the status of the heaters. Normally used to provide early indication of a heater fault, this input can also be used to measure the actual current flowing and indicate the value on the front HMI, provide alarm output, or make information available to a supervisory system for power usage calculations.

Easy recipe selection

Recipes can be used to change the operating parameters of the controller or even to change the full configuration - allowing one basic controller to be easily adapted to many applications. Recipes can be selected by the controller HMI using an understandable user defined name, by external hardware signals, or by digital communications.

Config adaptor

PC configuration of all 3000 Series can be achieved by using a configuration adaptor. It gives iTools the ability to communicate and configure devices without any power being connected. This device is ideal for distributors and OEMs who need to stock a wide range of options.
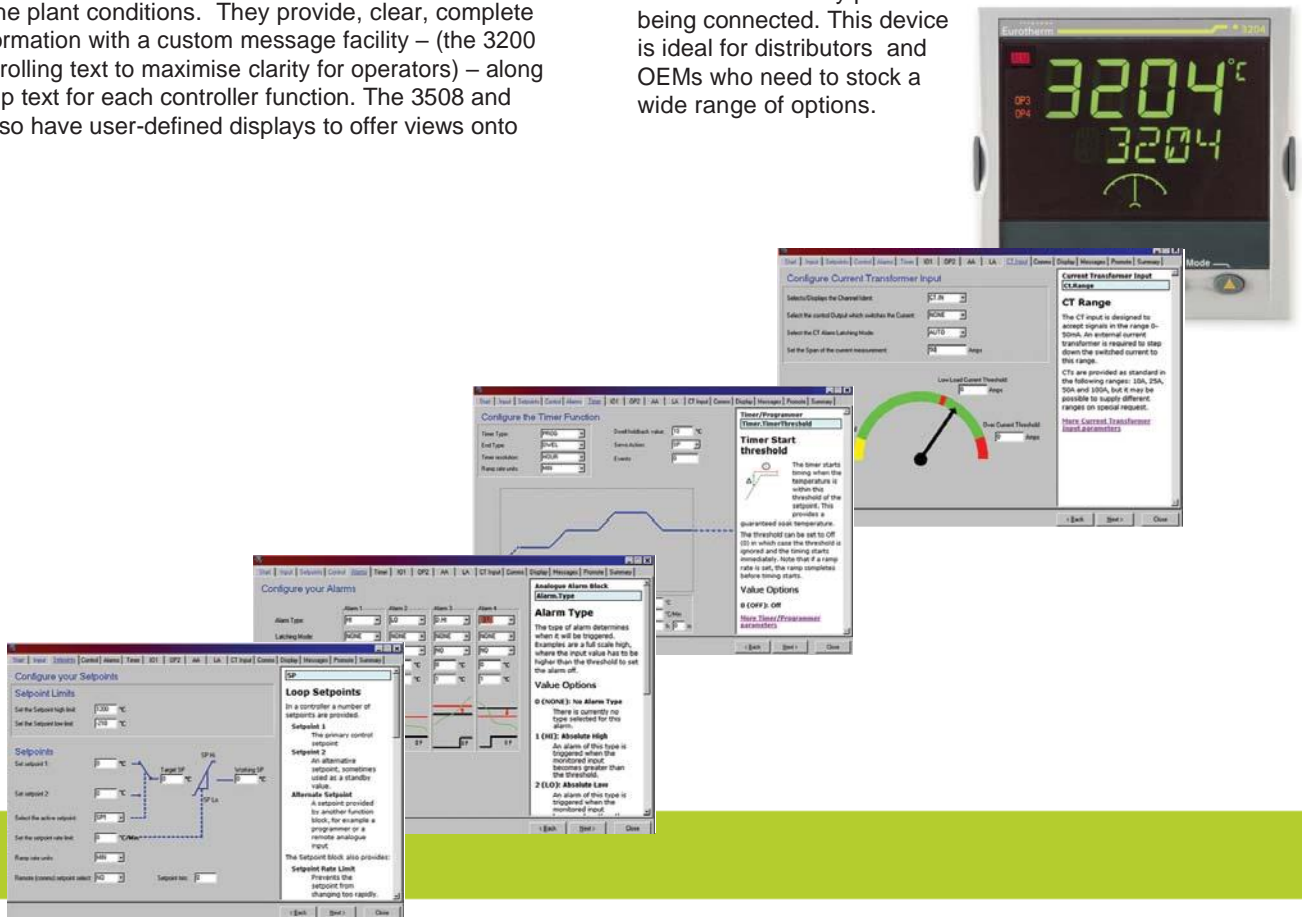
Flexible and Creative Solutions

Graphical Wiring Editor
The 3500 is capable of providing simple solutions to demanding applications. iTools includes a Graphical Wiring Editor to quickly implement and document such applications within the controller. This flexible tool provides drag and drop wiring and function block placement to save time in configuration and to aid with plant diagnostics.
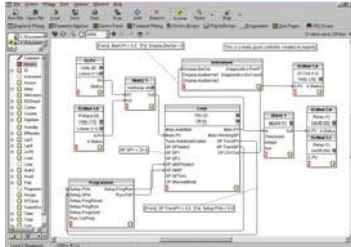
Specialist function blocks
The 3500 supports a comprehensive range of function blocks to provide solutions with simple configuration.

- Setpoint programmer for time based profiles – ideal for furnaces and test chambers
- Zirconia input for carbon potential control
- Wet/dry humidity measurement
- Transducer scaling – load cells, melt pressure etc
- Maths, logic and timer functions

A system product
The 3500 is ideal for use in systems with flexible communication options to suit the architecture and integrate with other products. Its functionality with maths, logic and timers could also negate the need for a small PLC – saving money, time and space in the system.

Setpoint programming
An impressive Ramp/Soak programmer is available in the 3500. The ability to store up to 50 different programs, each with dual channel capability makes its ideal for applications such as heat treatment furnaces, autoclaves and environmental chambers – where often more than one variable needs to be profiled. The 3500 has functionality not normally found in a product of this class and its flexibility in being able to interact with other function blocks makes it a very powerful device.
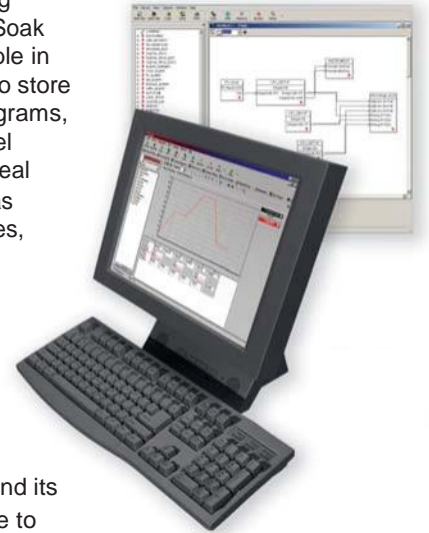
I/O expander
The I/O expander provides increased programmer functionality by increasing the digital I/O capability and expands the 3500 logic capacity by up to 40 I/O.

Feature packed
- 2 PID Loops
- SP Programs
- Maths Timers
- Fieldbus Comms
- Carbon Humidity
- Custom HMI

www.ek-systems.com   **email: ek-systems@juno.com**

EK-SYSTEMS INC
Products designed to integrate

Designed to integrate seamlessly with programmable logic controllers and other supervisory control and monitoring systems the 3000 Series provides a unique level of system integration.

System integration

By devolving loop control to a 3000 Series controller a PLC is able to concentrate on providing fast and effective logic control without the burden of running complex control algorithms. The 3000 Series controllers also offer better control performance than a PLC, the comfort of single loop integrity and ease of replacement without stopping the process.

A wide range of communication options are catered for by simply plugging in the appropriate module. All units support both RS232 and 2-wire RS485 communications using the Modbus RTU network protocol. Additionally the 3508 and 3504 support 4-wire RS485 and Profibus DP, DeviceNet® and Modbus TCP network protocols.

Serial communications

Utilising one of the most common protocols used within the Industrial Automation market, the Eurotherm implementation of Modbus RTU is based on a fixed address table. Parameter addresses are fixed and do not move depending on how the unit is configured making communication to intelligent masters very easy to accomplish.

Fieldbus networks

Profibus and DeviceNet are used extensively to communicate to Siemens and Allen Bradley programmable logic controllers.

The 3500 range can easily be integrated in machines where loop controllers are required to act as slaves to a PLC.

Using a PC editor the Profibus GSD file required for the PLC can quickly be created by simply selecting parameters from a pick list.

When using DeviceNet the 3500 EDS file can be registered and the parameter input and output tables edited using Allen Bradley's RSNetWorx™ configuration tools.
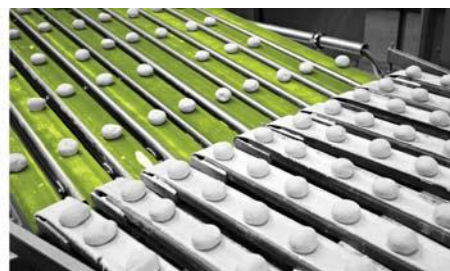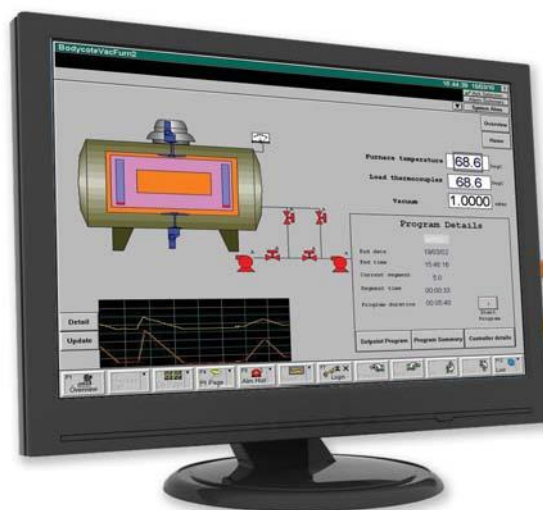
PROFINBUS DP

MODBUS TCP (ETHERN

DEVICENET

A powerful system tool

Ethernet connectivity
Utilising the popular Modbus TCP network protocol the 3500 controllers can be connected to an Ethernet network. This enables plug and play connection to other Eurotherm products such as graphic recorders and third party PLCs or SCADA.

Modbus master
The 3200 provides the facility to broadcast one parameter using Modbus RTU to a number of slave units. Typically this would be used to retransmit a Setpoint to other slave zones within a furnace. The 3500 allows full read/write Modbus RTU communications with multiple slave devices.
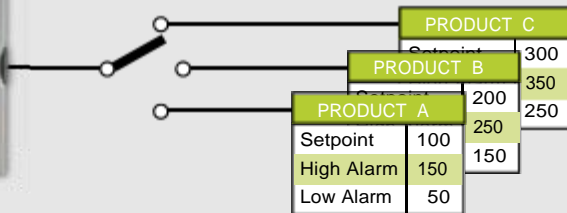
EK-SYSTEMS INC
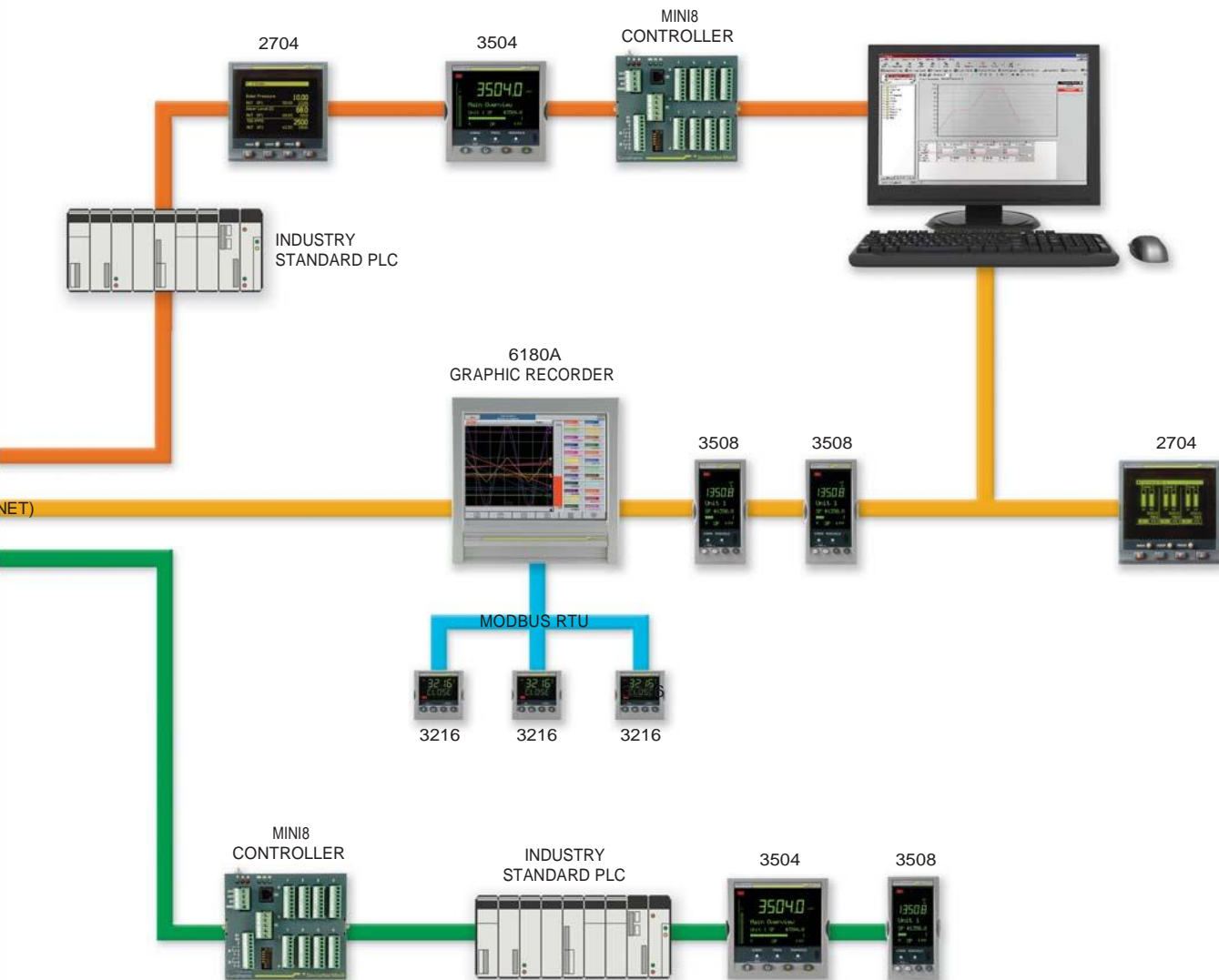
Real-world applications

Whether its for excellence in control, ease of use or its flexible and creative solutions, the 3000 Series can be used in many applications to solve problems and save time and money.

Recipes

The 3000 recipe function is unique in a controller of this class. Recipes can be stored under a user-defined name to recall a number of parameter settings. These settings may include operating variables or configuration parameters, providing a very powerful means of altering the set up of a controller in a single operation. Recipes may be recalled either from the HMI, over the communications link, or using digital inputs.

Timer
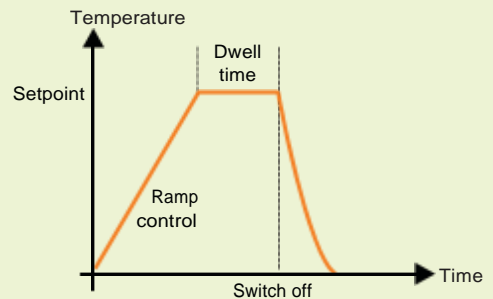
The simple timer in the 3200 may be used to control batch operations, eg. food ovens, sterilisers, fryers. Ideal for any application requiring a single dwell at the end of either a controlled ramp or natural approach to setpoint without the need for an additional timing device.

Feedforward
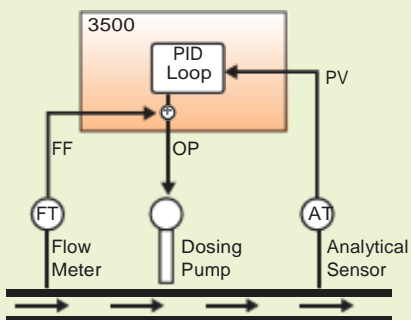
Feedforward is a control technique used to compensate for future disturbances or process changes. It provides an offset on the controller PID calculation to ensure that corrective action is taken to prevent the measured PV being disturbed. A typical application is additive dosing. By measuring the flow rate upstream from the dosing pump it is possible to use the feedforward feature of the 3500 to achieve an output proportional to the fluid flow rate. This means that the dosing rate immediately tracks any changes in flow rate and so prevents any possibility of dangerous over dosing.

Heater failure detection
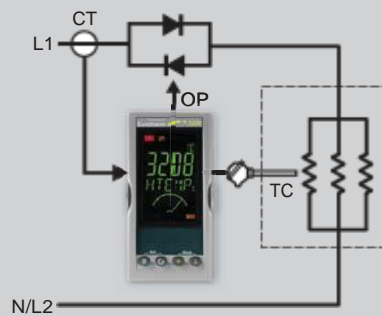
Programmer

Many applications need to vary temperature, or other process values, with time. The setpoint is varied by using a setpoint program. The program is stored as a series of 'ramp' and 'dwell' segments.

All 3000 Series controllers provide this feature. The 3200 has an extremely easy to use 8 segment programmer for simple applications while the 3500 has a very flexible dual channel programmer with storage for 50 programs. The 3500 is ideal for furnace, environmental chamber and autoclave applications that require greater flexibility.

www.ek-systems.com   email: ek-systems@juno.com
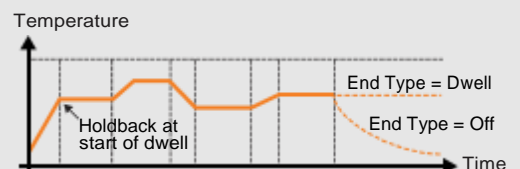
FOR MORE INFORMATION PLEASE CONTACT US:

PHONE: 847-981-0003   **FAX: 847-981-9333**

email: ek-systems@juno.com   **web: www.ek-systems.com**

www.ek-systems.com   **email: ek-systems@juno.com**