WEST TEMPERATURE
& PROCESS CONTROL

WEST CONTROLLERS

WEST Control Solutions

6100+, 8100+ & 4100+ Controllers

Features

- ¹⁄₁₆ DIN (48 x 48 x 110mm), ⅛ DIN (96 x 48 x 100mm) and ¼ DIN (96 x 96 x 100mm) formats (HxWxD)
- Ideal for general industrial applications
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to three outputs
- Flexible options for RS485, remote setpoint, digital inputs and transmitter power supply
- Programming port for fast configuration using FTP software

The + series of controllers are used in a broad range of temperature and process control applications due to their built-in versatility and ease-of-use.

Input and output options include relay, SSR, transmitter power supply, linear remote setpoint and digital.

Control functionality includes remote and dual setpoint options, heat/cool control and setpoint ramping.

Selection Guide

Option Slot 2
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Triac

Option Slot A
- **0** Not fitted
- **1** RS485 communications
- **2** Digital input
- **3** Remote setpoint input (basic)

Display Colour
- **0** Red upper & lower
- **1** Green upper & lower
- **2** Red upper, green lower
- **3** Green upper, red lower

6100 6100+	
8100 8100+	
4100 4100+	

P 6100   2   0   1   7   0   2   2   2

Option Slot 1
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Transmitter power supply

Option Slot 3
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Transmitter power supply

Power Supply
- **0** 100-240V AC
- **2** 24-28V AC or DC

Option Slot B
- **0** Not fitted
- **R** Remote setpoint input (full)

Modbus

6170+, 8170+ & 4170+ Controllers

Features

- ¹⁄₁₆ DIN (48 x 48 x 110mm), ⅛ DIN (96 x 48 x 100mm) and ¼ DIN (96 x 96 x 100mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Valve position indication
- Auto or manual tuning
- Process & loop alarms
- Remote/dual setpoint
- Modbus communications - RS485

The 6170+, 8170+ and 4170+ have been designed specifically for open loop valve motor drive (VMD) applications.

They feature an improved + series interface and greater field flexibility.

A unique VMD tuning algorithm continuously monitors the process to provide stable control at all times.

Selection Guide

Option Slot 2
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Triac
- **9** Dual relay

Option Slot A
- **0** Not fitted
- **1** RS485 communications
- **2** Digital input
- **3** Auxiliary input (basic)

Display Colour
- **0** Red upper & lower
- **1** Green upper & lower
- **2** Red upper, green lower
- **3** Green upper, red lower

6170 6170+	
8170 8170+	
4170 4170+	

P 6170   2   1   1   2   0   2   2

Option Slot 1
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Triac

Option Slot 3
- **0** Not fitted
- **1** Relay
- **2** DC for SSR
- **7** DC linear
- **8** Transmitter power supply

Power Supply
- **0** 100-240V AC
- **2** 24-28V AC or DC

Modbus

6700+, 8700+ & 4700+ Limit Controllers

Features
- ¹⁄₁₆ DIN (48 x 48 x 110mm),
  ⅛ DIN (96 x 48 x 100mm) and
  ¼ DIN (96 x 96 x 100mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Modbus communications across the range (as well as West ASCII)
- Configuration via PC
- Up to three outputs
- Improved, easy-to-use HMI
- FM approval

Limit controllers provide a latched relay output which is activated when process parameters either exceed or fall below the desired value, providing a fail safe cut-off which has to then be reset before the process can continue. LED indication shows when limits have been exceeded and when the relay is latched out.

With a full range of universal sensor input options, the + series range provide a valuable safety control element for most systems.

Selection Guide

Option Slot A
0	Not fitted
1	RS485 communications
3	Digital input

Option Slot 2
0	Not fitted
1	Relay
2	DC for SSR
7	DC linear
8	Triac

Display Colour
0	Red upper & lower
1	Green upper & lower
2	Red upper, green lower
3	Green upper, red lower

6700	6700+
8700	8700+
4700	4700+

P 6700 — 2 — 1 — 1 — 2 — 0 — 2 — 2

Option Slot 3
0	Not fitted
1	Relay
2	DC for SSR
7	DC linear
8	Transmitter power supply

Power Supply
0	100-240V AC
2	24-28V AC or DC

Modbus

6010+ & 8010+ Indicators

Features
- ¹⁄₁₆ DIN (48 x 48 x 100mm) and ⅛ DIN (horizontal) (48 x 96 x 110mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Output options for SSR driver, triac, relay and linear
- Optional alarms are selectable as latching or non-latching outputs
- PC Configurator with easy to use "wizard" suits both novice and experienced users
- Multi-point scaling and tare features included as standard
- Modbus and ASCII communications
- Red/green single-line 4-digit display
- Up to 4 outputs

The 6010+ and 8010+ digital panel process indicators are designed for optimal ease of use in a wide variety of temperature and related process applications.

Output options allow for PV retransmission or transmitter power supply and up to 4 alarm relays (latching or non-latching).

Selection Guide

Option Slot 2
0	Not fitted
1	Relay
2	DC for SSR
3	DC 0-10V
4	DC 0-20mA
5	DC 0-5V
6	DC 2-10V
7	DC 4-20mA
8	Triac
9	Dual relay

Option Slot A
0	Not fitted
1	RS485 communications
3	Digital input

Display Colour
0	Fixed red
1	Fixed green

6	6010+
8	8010+

P 6010 — 2 — 0 — 20 — 2 — 1 — 2 — 0

Option Slot 1
0	Not fitted
1	Relay
2	DC for SSR
3	DC 0-10V
4	DC 0-20mA
5	DC 0-5V
6	DC 2-10V
7	DC 4-20mA
8	Triac

Option Slot 3
0	Not fitted
1	Relay
2	DC for SSR
3	DC 0-10V
4	DC 0-20mA
5	DC 0-5V
6	DC 2-10V
7	DC 4-20mA
8	Transmitter power supply

Power Supply
0	100-240V AC
2	24-28V AC or DC

Modbus

WEST ⅟₁₆ DIN PROGRAMMABLE CONTROLLERS

WEST Control Solutions
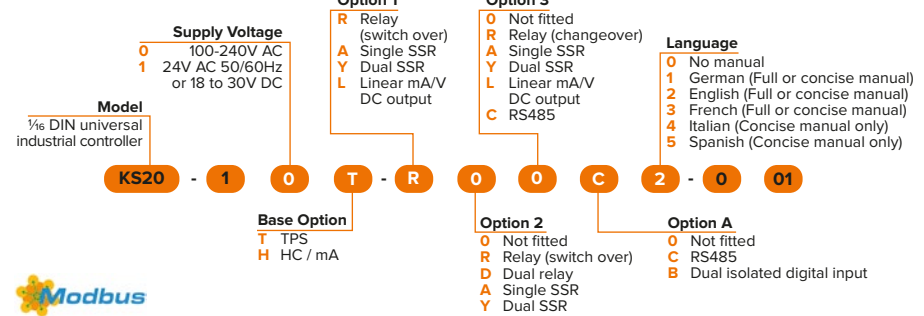
Pro-16 Advanced Process Controller

Features
- ⅟₁₆ DIN (48 x 48 x 118mm) format (HxWxD)
- 1 universal input + 1 optional
- Customer specific linearisation for sensor
- Up to 4 digital inputs
- Heater or remote setpoint current input
- Up to 6 outputs - relay, logic, SSR, linear DC
- Transmitter power supply
- 16 profiles x 16 segment

A compact, fully featured controller for demanding applications. Pro-16 is the only controller of its size, flexible with up to 6 outputs, 2 digital inputs, a remote setpoint input, RS485 communications and linked to best in class BlueControl® software.

The Pro-16 offers many integrated features for unrivalled performance such as two PID sets to ensure reliable control over a wide setpoint range and separate PID for heat and cool strategies for optimised control and stability. Extensive flexibility is offered with 1 universal input and 1 optional, up to 4 digital inputs, 6 outputs and an inbuilt profile.

Selection Guide

Model
⅟₁₆ DIN universal industrial controller

Supply Voltage
0   100-240V AC
1   24V AC 50/60Hz or 18 to 30V DC

Base Option
T   TPS
H   HC / mA

Option 1
R   Relay (switch over)
A   Single SSR
Y   Dual SSR
L   Linear mA/V DC output

Option 2
0   Not fitted
R   Relay (switch over)
D   Dual relay
A   Single SSR
Y   Dual SSR

Option 3
0   Not fitted
R   Relay (changeover)
A   Single SSR
Y   Dual SSR
L   Linear mA/V DC output
C   RS485

Option A
0   Not fitted
C   RS485
B   Dual isolated digital input

Language
0   No manual
1   German (Full or concise manual)
2   English (Full or concise manual)
3   French (Full or concise manual)
4   Italian (Concise manual only)
5   Spanish (Concise manual only)

KS20 - 1   0   T - R   0   0   C   2 - 0   01

Modbus

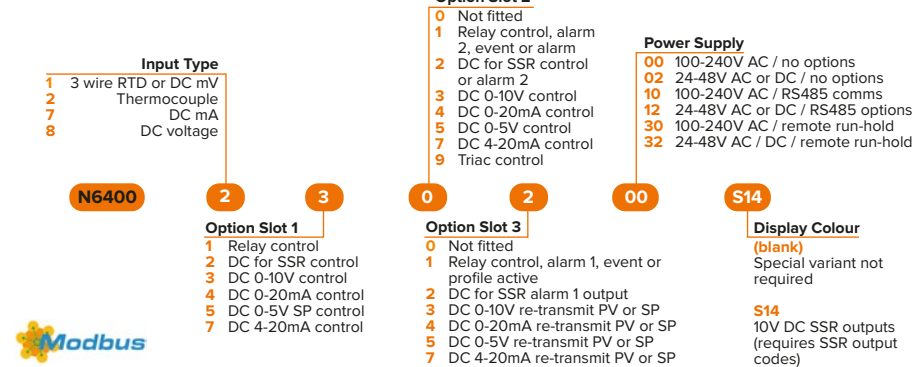## N6400 Programmable Process Controller

Features
- ⅟₁₆ DIN (48 x 48 x 110mm) format (HxWxD)
- Fast and accurate control via raPID fuzzy logic
- 'Auto hold' facility, remote run hold, event output, power failure recovery and guaranteed soak
- 4 programs with 16 free-form segments
- Program ramps in rate or time mode
- Delayed start
- RS485 Modbus comms

The N6400 is a powerful, single loop programmable controller for complex processes. It offers profiling capability with 4 programs each of 16 free format segments. The N6400 is an easy-to-use controller, which benefits from an informative display providing maximum process information at a glance. A dedicated configuration port allows configuration directly from a PC and allows for the development, transfer and storage of recipes by dedicated software.

Selection Guide

Input Type
1   3 wire RTD or DC mV
2   Thermocouple
7   DC mA
8   DC voltage

Option Slot 1
1   Relay control
2   DC for SSR control
3   DC 0-10V control
4   DC 0-20mA control
5   DC 0-5V SP control
7   DC 4-20mA control

Option Slot 2
0   Not fitted
1   Relay control, alarm 2, event or alarm
2   DC for SSR control or alarm 2
3   DC 0-10V control
4   DC 0-20mA control
5   DC 0-5V control
7   DC 4-20mA control
9   Triac control

Option Slot 3
0   Not fitted
1   Relay control, alarm 1, event or profile active
2   DC for SSR alarm 1 output
3   DC 0-10V re-transmit PV or SP
4   DC 0-20mA re-transmit PV or SP
5   DC 0-5V re-transmit PV or SP
7   DC 4-20mA re-transmit PV or SP

Power Supply
00   100-240V AC / no options
02   24-48V AC or DC / no options
10   100-240V AC / RS485 comms
12   24-48V AC or DC / RS485 options
30   100-240V AC / remote run-hold
32   24-48V AC / DC / remote run-hold

Display Colour
(blank)   Special variant not required
S14   10V DC SSR outputs (requires SSR output codes)

N6400   2   3   0   2   00   S14

Modbus

WEST MULTI-LOOP TEMPERATURE CONTROLLER

WEST Control Solutions

Pro-EC44 Single or Dual Loop Controller

Features
- ¼ DIN (96 x 96 x 117mm) format (HxWxD)
- Single or two loop
- Supports cascade and ratio control
- Graphical / text display (red/green backlit LCD)
- Profiler 255 segments shared by up to 64 program
- USB configuration and data access
- Modbus RS485 or Modbus TCP Ethernet
- Up to 5 PID sets
- Gain scheduling
- Datalogger with real-time clock

Pro-EC44 is designed to simplify user setup, step by step configuration with a wizard saves needing to work through several menus for initial configuration of common settings. A logical menu structure for intuitive navigation allows fast changes and updates to individual settings. Alternatively Pro-EC44 can be set up through the BlueControl® PC software.

Quick access to important product information
Stepping through several pages to get important process information can be time consuming and lead to inefficiency. The Pro-EC44 pages have been carefully structured to show users the important process information on a single page, minimising the steps to access data and settings. A colour change green/red LED backlight provides easily recognisable alarm indication to improve response times in taking corrective action.
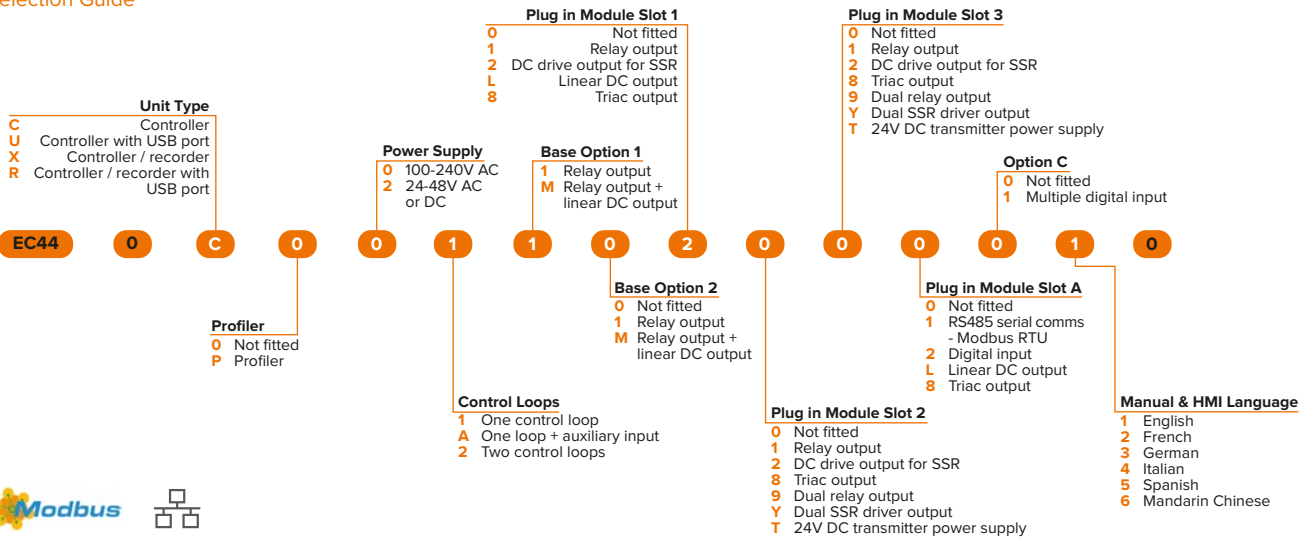
Configure controllers without the need for an expensive PC
PCs are often vunerable in the harsh environments of production and process plants. Pro-EC44 configuration files can be downloaded to a controller using a flash memory stick via the front USB port allowing for fast programming with no risk to expensive equipment. Settings can also be read via the USB port to clone additional devices or configure a replacement.

Reduce the number of controller spares needed on your production plant
Many production plants need several types of controller to get the control capability needed for different aspects of a manufacturing process. Pro-EC44 is a single controller meeting all your needs with many features to ensure good control performance.

Selection Guide

Unit Type
C	Controller
U	Controller with USB port
X	Controller / recorder
R	Controller / recorder with USB port

Profiler
0	Not fitted
P	Profiler

Power Supply
0	100-240V AC
2	24-48V AC or DC

Base Option 1
1	Relay output
M	Relay output + linear DC output

Base Option 2
0	Not fitted
1	Relay output
M	Relay output + linear DC output

Control Loops
1	One control loop
A	One loop + auxiliary input
2	Two control loops

Plug in Module Slot 1
0	Not fitted
1	Relay output
2	DC drive output for SSR
L	Linear DC output
8	Triac output

Plug in Module Slot 2
0	Not fitted
1	Relay output
2	DC drive output for SSR
8	Triac output
9	Dual relay output
Y	Dual SSR driver output
T	24V DC transmitter power supply

Plug in Module Slot 3
0	Not fitted
1	Relay output
2	DC drive output for SSR
8	Triac output
9	Dual relay output
Y	Dual SSR driver output
T	24V DC transmitter power supply

Plug in Module Slot A
0	Not fitted
1	RS485 serial comms - Modbus RTU
2	Digital input
L	Linear DC output
8	Triac output

Option C
0	Not fitted
1	Multiple digital input

Manual & HMI Language
1	English
2	French
3	German
4	Italian
5	Spanish
6	Mandarin Chinese

| EC44 | 0 | C | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 |

Modbus

WEST Control Solutions

MAX*VU* Rail - DIN-rail Temperature Controller / Transmitter & Limiter

MAXVU Rail is a compact DIN rail mount temperature controller/transmitter and limiter for general industrial and scientific equipment requiring a reduced back panel footprint, centralised control or minimal front panel components.

The slim 22.5mm width behind panel devices are quick to integrate in a system and easy to set-up, the affordable product family offers:

- PID controller for stable and efficient temperature and process control
- Transmitter function for monitoring and data collection of process measurements
- FM approved limit device for machine protection

Reduce setup time

Clear text/graphic display
MAX*VU* Rail incorporates the latest Oled technology display for high contrast text/graphic display with a wide viewing angle, easily visible to configure in bright sunlight or a dark control panel.

Short set up menu
MAX*VU* Rail has been specially designed for ease-of-use through a fast setup menu accessed from the front keypad.

- Includes the most common parameter settings
- Prioritised parameter options, default is the most common option with second most common next on the list
- Other parameters still available through the full menu

PC Configuration software
Alternatively, fast configuration of instruments can be achieved with the MAX*VU* software via the controller's front access configuration port.

- Logical menu driven interface
- Tables with drop down menus
- Save configuration files
- Graphical setup wizard with informative help panel
- Print report of controller settings

CONTROL

PID/ON-OFF/limit/transmitter
Heat/cool strategies
2 alarms - latching
1 or 2 point calibration
Ramp/dwell with delay time

HMI

Text/graphic Oled display
3 LED status indicators

PROGRAMMING

Front keys or software programming

OUTPUTS

2 or 3 outputs; relay, SSR or linear (1 max)

Linear ranges: 0/4 to 20mA
0/1 to 5V
0/2 to 10V

MECHANICS

DIN rail, 22.5mm width
RS485 comms bus connector option
(reduces wiring)

INPUTS

Thermocouple: B, C, J, K, L, N, R, S, T
RTD: PT100, 2 or 3 wire
Linear ranges: 0/4 to 20mA, 0/1 to 5V, 0/2 to 10V
Digital input: Isolated

MAX*VU* Rail **Controller / Transmitter** Selection Guide

Modbus

Output			
	Out 1	**Out 2**	**Out 3**
Z A 0	C/O Relay	SSR	None
Z R 0	C/O Relay	Relay	None
A A 0	SSR	SSR	None
Z A R	C/O Relay	SSR	Relay
Z R R	C/O Relay	Relay	Relay
A A R	SSR	SSR	Relay
Z A L	C/O Relay	SSR	Linear
Z R L	C/O Relay	Relay	Linear
A A L	SSR	SSR	Linear

Variant
0 Standard
E Extrusion

MVR	1	0	M	Z A 0	0	5	1	U0

Digital Input
1 Isolated

Supply Voltage
M 110 to 240V AC
L 24V AC / DC

Option Slot 2
0 Not fitted
C RS485 communications

MAX*VU* Rail **Limiter** Selection Guide

Modbus

Output			
	Out 1	**Out 2**	**Out 3**
Z R 0	C/O Relay	Relay	None
Z R R	C/O Relay	Relay	Relay
Z A L	C/O Relay	SSR	Linear
Z R L	C/O Relay	Relay	Linear
Z A 0	C/O Relay	SSR	None
Z A R	C/O Relay	SSR	Linear

MVR	1	T	M	Z A 0	0	5	1	U0

Digital Input
1 Isolated

Supply Voltage
M 110 to 240V AC
L 24V AC / DC

Option Slot 2
0 Not fitted
C RS485 communications

BlueControl Software

Features
- Fast configuration
- Reliable copying
- Settings are tested with the integrated simulation
- Archiving and documentation
- Reduced commissioning time
- Free download

BlueControl® is a powerful tool for setting parameters, simulation, commissioning, and diagnosing PMA's BluePort® devices as well as the KS80 controller range, rail line equipment, and KS vario.

Description
The primary function of BlueControl® is parametrising of control equipment with the assistance of plain texts, a clear structure, and online help, thus enabling quickly and safely. Hereby, all settings can be edited, copied, and saved. If BlueControl® is linked with an active device (online mode), the most important process data and settings of the connected device can be monitored and changed, and the trend function also permits them to be recorded. The display is in real-time.

A completely risk-free procedure is provided by the detailed device and process simulation, primarily for testing control functions before commissioning, or for training purposes. This feature also permits the simulation of comprehensive functions and complex devices, without having to connect the device or process signals to the PC.

Moreover, special functions are offered for numerous device types and families. For the BluePort® range, the front panel operation and display can be modified extensively. For devices with the PROFIBUS-DP option, the variable bus accesses are defined via BlueControl®.

The program editor provided in the expert version greatly simplifies the adjustments necessary for devices of the programmer type. BlueControl® uses established Microsoft Windows operating standards as well as the familiar operating elements and menu structures of Microsoft Office programs.
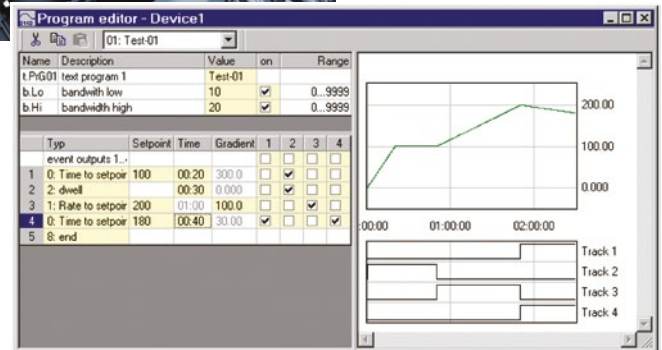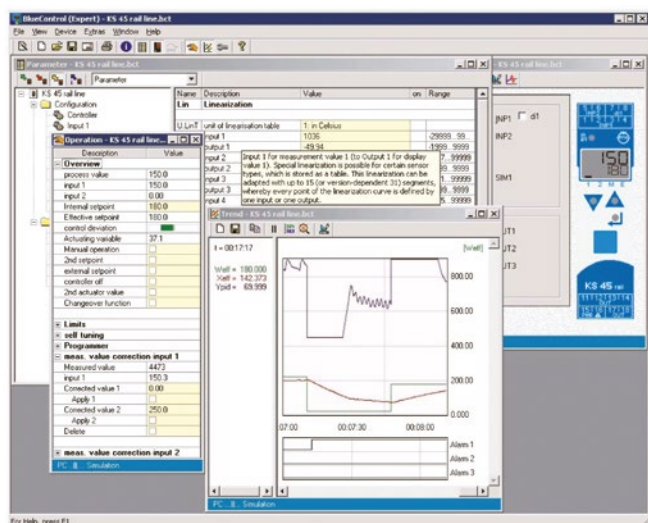
Wizard for controller tuning
The Wizard for controller tuning provides a quick entry into the use of BlueControl®. The most important adjustment options are summarised on just a few display screens.

Upload / Download
Upload: transferring (writing) the data from the PC or simulation into the external device. Download: fetching (reading) the data from the external device into the PC or simulation.

Simulation
The built-in device simulation permits the front operating elements as well as the inputs/outputs to be displayed. Here, the simulation takes the input scaling into account, as well as switching via digital inputs, device behaviour in case of a fault, and adjusted limit values. The adjustable process simulation is connected automatically to the outputs of the simulated device. The process simulator permits various processes to be represented, using all conventional models.

Online operation
The 'connect' mode provides the possibility to monitor and adjust the most important process values. Setpoints can be defined, and switchovers can be triggered. The self-tuning function can be started and the result is displayed. The finishing touch is provided by the trend graphics for device and simulation, enabling the quality of the loop to be assessed at a glance.

Trend recording
Trend recording permits data from the simulation or from the device to be displayed graphically. The trend display is in real-time. The display contains a time axis (relative = starting from the time of connection, or absolute = historical) and the measured values in the form of numeric data. Analogue values are displayed as curves, and digital data are shown in the format of a logic analyser.

Trend functions are: zoom, pause, measurement scale for precise evaluation, scaling and inscription of the Y axes, copying into the clipboard, saving in the Excel-compatible CSV format, opening of stored trends.

Communication via Modbus, Profibus, or Ethernet
For this, the device offers an interface in the front panel and at the rear. Devices are connected to the PC via:
- COM port (COM1...COM8)
- Profibus interface (PROFIBUS 1...4) via a Siemens or Hilscher card
- Ethernet interface

Relay CL - 1PH Thyristor Power Controller

Features

- Load type: normal resistance, infrared long, short and medium waveform, silicon carbide and cold resistance coupled with transformer
- Inputs: 0-10V dc, 4-20mA, 10kpot, SSR, RS485
- Firing mode: burst firing, single cycle, soft start + phase angle and delayed triggering
- Operating temperature: 0 to 40°C without derating
- Control mode: voltage, VxI power and current I & I2
- RS485 port. RTU Modbus protocol
- Comply with EMC

Single-phase thyristor power controller for complex load requirements including feedback and current limit.

Selection Guide

Current

035	35A	**180**	180A
040	40A	**210**	210A
060	60A	**280**	280A
090	90A	**400**	400A
120	120A	**500**	500A
150	150A	**600**	600A
		700	700A

Control Mode

O	Open Loop
U	Voltage feed back V
W	Power feed back VxI
Q	Voltage squared V2
I	Current feed back I

Fuse & Option

Y	For units =<40 fuse + fuse holder + CT standard
H	Fuse + fuse holder + CT + HB with screw terminal
Y	For units > 40A fixed fuse + CT
H	Fixed fuse + CT + HB

Input

V	0-10V DC
A	4-20mA
K	10kpot
R	RS 485

Approvals

0	CE EMC for European market

RCL	035	4	1	V	D	O	Y	0	0	2	1

Max Voltage

4	480V
6	600V
7	690V (1)

Fan Voltage

0	No fan < 120A
1	No fan 110V > 90A
2	No fan 220V > 90A standard version

Manual

0	No manual
1	Italian
2	English
3	German
4	French

Version (5)

1	Std with fuse + fuse holder up to 40A
2	Second fuse normally used with phase to phase (4)
E	Second fuse with an additional safety electromechanical relay to open in alarm conditions (4)

Voltage Supply Aux.

1	90-130V (2)
2	170-265V (2)
3	230-345V (2)
5	300-530V (2)
6	510-690V (2)
7	600-760V (2)

Firing

D	Delayed triggering + burst firing DT+BF (3)
P	Phase angle PA
E	Soft start + phase angle S+PA

(1) Available on units > 280A
(2) Load voltage must be included in selected auxiliary voltage range
(3) 8 cycles at 50% power demand
(4) This option is possible with unit up to 40A. Dimension equal relay M 2PH of same rating
(5) After final option, write current and voltage of load inside brackets Ex (190A-400V)

Modbus

Relay S - 1PH, 2PH & 3PH Thyristors

Features
- Load type: normal resistance, infrared long and medium waveform
- Inputs: SSR Standard, 0:10V, 4:20mA and heater break alarm are options
- Firing mode: zero crossing, burst firing available with analogue input only
- Operating temperature: 0 to 40°C without derating
- Comply with EMC

Simple on/off firing with a DC logic input, time proportioned burst firing with a DC linear input (basic firing selectable between 4, 8 or 16 cycles). These simple units can be connected with Relay PC to manage multi-zone system.

Selection Guide

Current

030	30A	**180**	180A
035	35A	**210**	210A
040	40A	**280**	280A
060	60A	**400**	400A
090	90A	**500**	500A
120	120A	**600**	600A
150	150A	**700**	700A

Input
S SSR
V 0-10V DC
A 4-20mA

Control Mode
O Open Loop

Fuse & Option
0 No Fuse for all units =< 40A
F Fuse + fuse holder
Y Fuse + fuse holder + CT
H Fuse + fuse holder + CT + HB
X Fuse + fuse holder + CT + HB
with flat cable connection
F Fixed fuses std for all units > 40A (6)
Y Fixed fuses std + CT
H Fixed fuses std + CT + HB

Approvals
0 CE EMC for European market

RS1	**030**	**4**	**1**	**V**	**Z**	**O**	**Y**	**0**	**0**	**2**	**1**

Model
1 1 PH
2 2 PH
3 3 PH

Max Voltage
4 480V
6 600V
7 690V (1)

Voltage Supply Aux.
0 No aux. voltage without HB & or analogue input up to 210A
4 With HB and/or analogue input on all unit =<210A aux volt 12-24V AC-DC (2)
1 90-130V
2 170-265V (3)
3 230-345V (3)
5 300-530V (3)
6 510-690V (3)
7 600-760V (3)

Fan Voltage
0 No fan < 120A
1 No fan 110V > 90A
2 No fan 220V > 90A standard version

Firing
Z ZC Zero crossing (4)
4 Burst firing 4 cycles on at 50% power demand (5)
8 Burst firing 8 cycles on at 50% power demand (5)
6 Burst firing 6 cycles on at 50% power demand (5)

Manual
0 No manual
1 Italian
2 English
3 German
4 French

Version
1 Std with one fuse only
2 Units with 2 fuses + fuse holder =< 40A (7)
E Units with 2 fuses + fuse holder + Safety relay + fuse =< 40A (8)

Modbus

(1) Available on units > 280A
(2) For all units > 210A with whichever options and inputs
(3) Load voltage must be included in selected auxiliary voltage range for units >210A
(4) With 690V the firing is random
(5) Available only with analogue input
(6) Fixed fuses over 40A
(7) If you need one relay S 1PH with 2 fuse & fuse holder. For dimensions see relay S 2PH. This solution can be used up to 40A max.
(8) If you need one relay S 1PH with 2 fuse & fuse holder + safety relay. For dimensions see relay S 2PH. This solution can be used up to 40A max.

WEST Control Solutions

Relay M - 1PH, 2PH & 3PH Thyristors

Features

- Load type: normal resistance, infrared short, long and medium waveform and silicon carbide
- Inputs: 0:10V dc, 4:20mA, 10kpot, SSR, RS485
- Firing mode: zero crossing, burst firing, single cycle, soft start + phase angle and delayed triggering

- RS485 port. RTU Modbus protocol
- Operating temperature: 0 to 40°C without derating
- Control mode: voltage, VxI power, I and I2
- Comply with EMC

Time proportioned burst firing with a DC linear input, front panel display and RS485 communications as standard.

Selection Guide

Current

035	35A	180	180A
040	40A	210	210A
060	60A	280	280A
090	90A	400	400A
120	120A	500	500A
150	150A	600	600A
		700	700A

Control Mode

O	Open Loop
1	Voltage feed back
2	Power feed back
3	Current feed back
4	Voltage to power feed back transfer

Fuse & Option

Y	For units =< 40A fuse + fuse holder + CT
H	Fuse + fuse holder + CT + HB with terminal
Y	For units > 40A fixed fuse std + C (4)
H	Fixed fuse std + CT + HB
A	Control mode retransmission 4-20mA
V	Control mode retransmission 0-10mV

Input

S	SSR
V	0-10V DC
A	4-20mA

Approvals

0	CE EMC for European market

RM1 | **035** | **4** | **1** | **V** | **D** | **O** | **Y** | **0** | **0** | **2** | **1**

Model

1	1 PH
2	2 PH
3	3 PH

Max Voltage

4	480V
6	600V
7	690V (1)

Fan Voltage

0	No fan < 120A
1	No fan 110V > 90A
2	No fan 220V > 90A standard version

Manual

0	No manual
1	Italian
2	English
3	German
4	French

Version

1	Std with one fuse only
2	Units with 2 fuses + fuse holder =< 40A (5)
E	Units with 2 fuses + fuse holder + Safety relay + fuse =< 40A (6)

Voltage Supply Aux.

1	90-130V (3)
2	170-265V (3)
3	230-345V (3)
5	300-530V (3)
6	510-690V (3)
7	600-760V (3)

Firing

Z	ZC Zero crossing
C	Single cycle SC
B	Burst firing BF
J	Soft start + burst firing S+B
D	Delayed triggering + burst firing DT+BF
P	Phase angle PA
E	Soft start + phase angle S+PA

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(4) Fixed fuses over 40A
(5) If you need one relay S 1PH with 2 fuse & fuse holder. For dimensions see relay S 2PH. This solution can be used up to 40A max.
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Modbus

WEST RAIL-MOUNTED DEVICES

RaiLine

Features
- 96 x 22.5 x 117.5mm format (HxWxD)
- Fieldbus couplers for Profibus, CAN, Modbus TCP, Modbus RTU and Ethernet IP - ensures cost-effective and convenient connections to PLC, IPC and operating terminals
- Bus monitoring
- Pre-defined output states in case of communication failure
- Compact design - modules only 22.5mm wide
- 3-key operation and multi-line LC display
- Plug-in terminals - no wiring to disconnect in case of module replacement
- Module replacement during operation (hot swap)
- BluePort® front port
- PC configuration tool BlueControl®
- Cost advantages during projecting, implementation and maintenance
- Local operation
- Freely configurable menu structure
- Freely selectable monitoring functions

Decentralised installations with fieldbus systems are finding increasing use in process and machine automation. In order to ensure reliable control in these allocations - also involving complex processes - modular components with additional functionality are required. The flexible RaiLine system, WEST Control Solutions offers a comprehensive product portfolio for decentralised automation.

The combination of RL fieldbus couplers (for Profibus, CAN, Modbus TCP and Modbus RTU) with various I/O-modules, KS 45 universal controller, Uniflex CI 45 and the TB 45 temperature limiter, permits modular systems with distributed intelligence to be created.

The space-saving modules for rail mounting and other universally applicable system components help to save time and costs during system configuration, engineering and commissioning.

KS 45 Process Controller

Features
- Display and operating functions
- Two universal inputs possible
- Timer and programmer
- Customised linearisation profile
- 2-point, 3-point, motor valve & continuous control
- Auto/manual switchover
- Fast sampling rate
- Universal output

The KS 45 process controller is a stand alone version for direct connection via RS485 Modbus or system version with buscoupler and inter-module connections permit additional controllers, transmitters and limiters to be fitted without wiring.

CI 45 Universal Transmitter

Features
- Customised linearisation profile
- Correction of measurement value
- Slave pointer (min/max indicator)
- Two universal inputs possible
- Counter/frequency input, frequency output
- High resolution
- Fast sampling rate
- Universal output
- Two relay outputs

A universal transmitter, stand alone version for direct connection via RS485 Modbus or system version with buscoupler and inter-module connections permit additional controllers, transmitters and limiters to be fitted without wiring.

RL 400 I/O Expansion Modules

Features
- RL400 offers a variety of sophisticated I/O modules
- High precision analogue inputs
- Output modules with fast on board signal processing
- Reinforced galvanic isolation
- Linearisation and measured value correction
- Up to 62 modules in a system
- Digital and analogue input & output modules:
  - Pt 100 in 2 or 4-wire connection - Thermocouples
  - Relays - Potential-free digital inputs
  - NPN/PNP inputs - mA/V

TB 45 Temperature Limiter

Features
- 2 universal inputs possible, 2 relay outputs, analogue output
- Display and operating functions
- For all thermocouple types and resistive sensors
- Reset via key combination or external contact
- Type-tested to EN 14597 (replaces DIN 3440)

The TB 45 temperature monitor/limiter offers a stand alone version for direct connection via RS485 Modbus or system version with buscoupler and inter-module connections which permit additional controllers, transmitters and limiters to be fitted without wiring.