Eurotherm®

Expertise in Systems & Solutions, Services & Support

Product Selection Guide

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Life Is On | Schneider Electric

At Eurotherm we passionately support our customers with specialist knowledge and experience to help achieve process excellence through machine automation efficiency and regulatory compliance.

Our vision is to be the preferred supplier of machine automation products, applications, power and process control systems and services for customers in specialist industries, while our mission is to solve our customers' problems with pioneering products, bespoke systems and industry expertise.

Our wide range of products is rich in features and designed for easy operation and reduced engineering time. They contain market-leading control algorithms, recording and data management strategies which add value to industrial processes, improving quality, reducing waste and helping to keep data for as long as it is needed.

Decades of experience in providing world-class process control, recording and automation are supported by a continuous research and development program so that our solutions continually grow to meet modern challenges faced across a wide range of industries. Our customers are fully supported by a global sales and service network of highly qualified engineering personnel who understand the applications and industries they serve.

PID Controllers, Indicators and Alarm Units

Single Loop	piccolo™			3000 Series				EPC3000			3000 Series		Modular DIN Mount Controller EPC2000
Features	P116	P108	P104	3216	3208	32h8	3204	EPC3016	EPC3008	EPC3004	3508	3504	
Panel size (DIN)	1/16	1/8	1/4	1/16	1/8	1/8	1/4	1/16	1/8	1/4	1/8	1/4	DIN Rail Mounting Width 33mm
IP Rating	IP65, NEMA12			IP65, NEMA 12 / NEMA 4X (3216 Only)				WD: IP66, NEMA4x (Indoor Use) ST: IP65, NEMA 12			IP65, NEMA 12		IP20 (with connector plugs fitted)
Display Type	LED 2x4 Digit (P116), LED 3x4 Digit (P108, P104)			Main: 4 digits Lower: 5 character starburst (3216/08/04) 19 character starburst (32h8)				High Visibility LCD three color multifunction display 3008/3004 4.5,5 Digit PV, 2 starburst 3016 4 Digit PV, 1 starburst			Main PV: 5 digit plus 4 line alphanumeric		External HMI panel
Supply Voltage	24Vdc/ac 85-264V ac			24V dc/ac 85-264V ac				24Vdc/ac 85-264V ac			24V dc/ac 85-264V ac		24Vac/Vdc
Safety Approvals	EN14597 TR, FM			EN 14597 TR, FM				EN14597 TR , EN13849 PLc Achilles CRT Level 1 Cybersecurity			—		EN13849 PLc Achilles CRT Level 1 Cybersecurity
Input Type	TC, RTD, mV, mA, CT			TC, RTD, mV, mA, CT				TC, PT100/PT1000 RTD, mV, mA, Zirconia.			TC, RTD, mV, mA, Volts		TC, PT1000, mA, mV, Volts
PV Accuracy	<0.25%			<0.25%				<0.1% low thermal drift			<0.1%		<0.1% low thermal drift
Control Types	On/Off, PID			On/Off, PID, VP				On/Off, PID, VP, Carbon Potential			On/Off, PID, VP		On/Off, PID, VP
Special Features	Undo function, P-Code quick setup			Recipes, Text messaging				Dual Input Control, Atmosphere Control, Recipes, Maths and Totalizer Function, Text Messaging, Application Templates, Gain Scheduling, Native Ethernet			Dual Input Control, Atmosphere Control, Recipes, User Screens, Gain Scheduling, Master Comms		Recipes, Maths and Totalizer Functions Gain Scheduling, Native Ethernet
SP Programmer	—			4 Ramp + 4 Dwell				Up to 20 programmes of 8 segments or 10 programmes of 24 segments			50 Programs 500 Segments max		Up to 20 programmes of 8 segments or 10 programmes of 24 segments
Analogue IP/OP	In: 2 Out: 3			In: 2 Out: 3				In 4, Out 3 3008/3004: 2PV, 1CT, 3 Isolated DC OP 3016: 1PV, 1CT, 1 Aux (RSP), 2 Isolated DC OP			In: 5 Out: 6		In 1, Out 1
Digital IP/OP	In 2, Out 4			In: 3 Out: 4				In 5, Out 4 8 (max) Open Collector DIO 3008/3004			In: 40 Out: 41		In 3 (max), Out 3 (max).
Digital Comms	Modbus RTU			Modbus				Modbus RTU, EIA-485, Modbus/TCP, BACNet, Ethernet IP			Modbus, DeviceNet, Profibus, Ethernet*		Modbus RTU EIA-485, Modbus/TCP Ethernet
User Wiring	—			—				✓			✓		✓
Alarm Types	Hi, Lo, Dev, Sensor Fault, Heater fail, Process Fault			Hi, Lo, Dev, Heater fail, Sensor break, Event				Hi, Lo, Dev, Sensor fault, Heater fail, Rate of Change, Event			Hi, Lo, Dev, Heater fail, Sensor break, Event		Hi, Lo, Dev, Sensor fault, Rate of Change, Event

* Consult factory for availability

PID Controllers, Indicators and Alarm Units

	Recorder/ Controller	Discrete Panel Mount Controllers				Modular DIN Mount Controller
Advanced and Multi Loop						
			3000 Series		**2000 Series**	
Features	**nanodac™**	**3508**	**3504**	**2604**	**2704**	**Mini8™**
Panel size (DIN)	1/4	1/8	1/4	1/4		DIN rail
IP Rating	IP65, NEMA 12	IP65, NEMA 12		IP65		IP20
Display Type	3.5" TFT color, 320 x 240 pixels	Main PV: 5 digit plus 4 line alphanumeric		2 x 5 dig LED + 2 line text	Dot Matrix	Remote
Supply Voltage	24V dc/ac 85-264V ac	24V dc/ac 85-264V ac		24V dc/ac, 85-264V ac		24V dc
Input Type	TC, RTD, mV, mA, Volts	TC, RTD, mV, mA, Volts		TC, RTD, mV, mA, Volts		TC, mV, mA, RTD, CT
PV Accuracy	<0.1%	<0.1%		<0.1%		<0.1%
Control Types	On/Off. PID. VP	On/Off, PID, VP		On/Off. PID, VP		On/Off. PID
Control Loops	2	2		3		16
Control Algorithms	Single, Cascade, User wired	Single, Override, User wired		Single, Cascade, Override, User wired		Single, User wired
Special Features	Temperature/Humidity, Cascade Autotune, Carbon Potential, Recipes, Gain Scheduling, Master Comms, Native Ethernet	Temperature/Humidity, Carbon Potential, Recipes, Gain Scheduling, Master Comms		Carbon Potential, Humidity, Melt Pressure, Master Comms	Carbon Potential, Humidity, Melt Pressure, Vacuum	Temperature/Humidity Control, Load Diagnostics, Gain Scheduling
SP Programmer	100 Programs, 25 Segments Local/USB/FP	50 Programs 500 Segments max		50 Programs 500 Segments max	60 Programs 600 Segments max	8 Programs 16 Segments each
Analogue IP/OP	In: 8 Out: 3	In: 5 Out: 6		In: 8 Out: 8		In: 32 Out: 8
Digital IP/OP	In: 4 Out: 5	In: 40 Out: 41		In: 44 Out:43		In: 34 Out: 32
Digital Comms	Modbus TCP/IP Master/Slave, EtherNet/IP Client/Server	Modbus, DeviceNet, Profitbus, Ethernet*		Modbus, DeviceNet Profibus	Modbus, DeviceNet Profibus Ethernet*	Modbus, DeviceNet, Profibus, Modbus TCP/IP EtherCAT, EtherNet/IP Server
User Wiring	✓	✓		✓	✓	✓
Alarm Types	Hi, Lo, Dev,	Hi, Lo, Dev, Heater fail, Sensor break, Event		Hi, Lo, Dev, Heater fail, Event, Rate of Change		Hi, Lo, Dev, Heater fail, Sensor break, Event

* Consult factory for availability

PID Controllers, Indicators and Alarm Units

Indicators and Alarm Units				
	3000 Series			**2000 Series**
Features	**3216i**	**32h8i**	**3204i**	**2408i**
Panel size (DIN)	1/16	1/8	1/4	1/8
IP Rating	IP65 NEMA 4X	IP65 NEMA 12	P65 NEMA 12	IP65
Display Type	4 Digit LED plus 5 character alphanumeric	5 Digit LED plus 9 character alphanumeric	4 Digit LED plus 5 character alphanumeric	Large 5 Digit LED
Supply Voltage	24V dc/ac 85-264V ac	24V dc/ac 85-264V ac	24V dc/ac 85-264V ac	24V dc/ac 85-264V ac
Safety Approvals	EN14597/TW, FM	EN14597/TW, FM	EN14597/TW, FM	—
Input Type	TC, RTD, mV, mA, Custom	TC, RTD, mV, mA, Volts ,Custom, Strain gauge	TC, RTD, mV, mA, Custom	TC, RTD, mV, mA, Volts, Custom
User Calibration	5 point	5 point, Shunt, Load cell, Auto tare	5 point	15 point, Shunt, Load cell, Comparison, Auto tare
PV Input Selection	—	—	—	Hi, Lo, Select, Switchover, Derived
No of Alarms	4	4	4	8
Alarm Types	Hi, Lo, Dev, Sensor break, Rate of change	Hi, Lo, Dev, Sensor break, Rate of change	Hi, Lo, Dev, Sensor break, Rate of change	Hi, Lo, Dev, Sensor break, Rate of change, Event
No of Relay Outputs	3	2	2	7
Digital IP/Logic OP	In: 2 Out: 0	In: 2 Out: 0	In: 2 Out: 0	2 plus possible further 9/9
Retransmission	Non isolated	Isolated	Isolated	Isolated
Custom Messages	128 Characters	128 Characters	128 Characters	—
Slave Comms	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU, DeviceNet, Profibus DP
Melt Pressure	—	✓	—	✓
Transducer PSU	—	10V dc	—	5/10V dc
Transmitter PSU	—	24V dc	24V dc	29V dc

PID Controllers, Indicators and Alarm Units

Plastics Process Control	Melt Pressure Controller	Melt Pressure Indicator
	piccolo™	
Features	P304C	P304I
Panel size (DIN)	1/4	1/4
Display Type	2 x 5 Digit LED	2 x 5 Digit LED
Supply Voltage	24V dc/ac 85-264V ac	24V dc/ac 85-264V ac
Input Type	2 x strain gauge, Linear 0-10V, 0-20mA	2 x strain gauge, Thermocouple, PT100, PT500, Linear 0-10V, 0-20mA
PV Accuracy	<0.1%	<0.1%
Control Types	Melt pressure, Differential melt pressure	Melt pressure indication
Control Loops	1	—
Control Algorithms	PID	—
Special Features	50mS update	50mS update
Shunt cal	✓	✓
Tanducer Power Supply	✓	✓
Analog IP/OP	2 (control, retrans)	2 (retrans)
Digital IP/OP	In: 4 Out: 3	Out: 3
Digital Comms	Modbus RTU	Modbus RTU
Alarm Types	High, Low, Deviation, Differential pressure	High, Low, Deviation, Differential pressure

Recorders and Data Acquisition

Paperless/ Graphic	Paperless Graphic Recorders					Portable TUS Recorders			Recorder / Controller	Scalable Recorder
6000 Series										
Features	6100A	6180A	6100XIO	6180XIO	6180AeroDAQ	6100E	6100A	6180A	nanodac™	versadac™
Inputs	18	48	—	—	48	6	15	30	4	128 and 256 Dig
Graphic Display	5.5"	12.1"	5.5"	12.1"	12.1"	5.5"	5.5"	12.1"	3.5"	—
Protection	IP66		IP66		IP66	IP66	IP66	IP66	IP65 NEMA12	IP21
Relay Outputs	✓		—		✓	✓	—	—	✓	✓
Annotation	✓	✓	✓		✓	✓	✓	✓	✓	✓
Contact Inputs	✓		—		✓	—	—	—	✓	✓
Communications	Modbus TCP/RTU Master & Slave, EtherNet/IP Server					Modbus TCP Slave	Modbus TCP/RTU Master & Slave, EtherNet/IP Server			Modbus TCP/RTU Master & Slave, EtherNet/IP Client/Server
Mathematics, Counters, Timers, Totalisers, PC Configuration, Ethernet/FTP	✓		✓		✓	✓	✓	✓	✓	✓
Auditor Features	✓		✓		✓	—	✓	✓	✓	✓
Batch	✓		✓		✓	—	✓	✓	✓	✓
Custom Screens	✓		✓		✓	—	✓	✓	—	—
Remote Viewing	✓		✓		✓	✓	✓	✓	✓	✓
Recording Speed	8Hz		8Hz		8Hz	1Hz	8Hz	8Hz	8Hz	8Hz
Trend Speed	8Hz		8Hz		8Hz	1Hz	8Hz	8Hz	8Hz	8Hz
Network Addressing	DCHP, Boot P, Fixed IP						DCHP, Boot P, Fixed IP			DHCP, Fixed IP
USB	3	1	3		3	1	3	3	1	1
Reports	10	10	10		10	—	10	10	—	10
Groups	12	12	12		12	1	12	12	1	30
Review of History (screen)	✓	✓	✓		✓	✓	✓	✓	✓	—
AMS2750E	✓	✓	✓		✓	—	✓	✓	✓	✓

Solid State Relays (SSRs) and Power Controllers
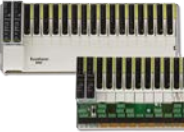
Solid State Relays (SSRs) and Simple Thyristor Controller	Panel Mount Solid State Relays		DIN Rail Solid State Relays		Simple Thyristor Controller
Features	**ZELIO™ SSP1**	**ZELIO™ SSP3**	**ZELIO™ SSM1**	**ZELIO™ SSM3**	**ESwitch**
Heater Type Constant Resistance	✓	✓	✓	✓	✓
AC Output	✓	✓	✓	✓	✓
Maximum Current (Amps)	125A	50A	55A	25A	50A
Maximum Voltage (Volts)	660V	530V	660V	600V	500V
Integrated Heatsink	—	—	✓	✓	✓
Controlled Phases	1	3	1	3	1
dc Logic Input	✓	✓	✓	✓	✓
ac Logic Input	—	—	—	—	✓
Firing Mode Zero Crossing	✓	✓	✓	✓	✓
'Partial Load Failure'	—	—	—	—	✓
Alarms	—	—	—	—	✓
Compliance	CE UL CSA EAC	CE UL CSA	CE UL CSA EAC	CE UL CSA EAC	CE UL CSA EAC
Compliance to : EN60947-4-3	—	—	—	—	✓

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Power Controllers

|	Single Phase	Single & Multi Phase		Multi Channel
Power Control				
	EFit™	**EPack™ Lite**	**EPack™**	**EPower™**
Description	Easy to integrate and commission, highly cost effective, the EFit power controller provides no compromise control for resistive and infrared heating elements.	The EPack Lite range offers a simplified choice, fast commissioning without any compromise on performance in order to provide a high level of quality, accuracy and reliability to the process.	EPack power controllers can deliver real savings, significantly reducing your energy costs. Get the most from your operations; quick and easy to install, integrate and commission.	The EPower controller uses the newest technologies and innovations to manage your process and reduce your energy costs. On every level it brings you the flexibility you need to meet your requirements now and in the future.
Level of Functionality	⚡	⚡ +	⚡⚡	⚡⚡⚡
Features				
Type of Load	Resistive / Transformer Primary / Silicon Carbide / Mosi / SWIR	Resistive / Transformer Primary	Resistive / Transformer Primary / Silicon Carbide / Mosi / SWIR	Resistive / Transformer Primary / Silicon Carbide / Mosi / SWIR
Network	1PH	1PH / 2PH / 3PH	1PH / 2PH / 3PH	1PH / 2PH / 3PH / 4PH
Voltage Line Max	100V-230V / 380V-500V	100V-500V	100V-500V	100V-690V
Max Load/Current Power	16A-50A	16A-125A	16A-125A	"Compact 50A-630A / Decentralized 800A-4000A (MC)"
Load Coupling	1PH	Star (3S) / Delta (3D) / Star with Neutral (4S) / Open delta (6D)	Star (3S) / Delta (3D) / Star with Neutral (4S) / Open delta (6D)	Star (3S) / Delta (3D) / Star with Neutral (4S) / Open delta (6D)
Aux. Supply	Self Supply / 110V / 230V	24V / 100V-500V	24V / 100V-500V	110V / 230V
Input Type	mA / V / Potentiometer	mA / V / Potentiometer / Logic DC / Logic Contact	mA / V / Potentiometer / Logic DC / Logic Contact / Via Communication	mA / V / Potentiometer / Logic DC / Logic Contact / Via Communication
I/O	Fixed	Fixed / Adjustable	Fixed / Adjustable	Adjustable / Modular
Communication	-	-	Modbus TCP / Ethernet IP / EtherCAT / Profinet	Modbus RTU / Profibus / DeviceNet / CC-Link
Extra	-	-	Daisy Chain / FDT	PLM energy management / Daisy Chain / FDT
Firing mode	Phase Angle / Burst / Single Cycle / Advanced Single Cycle	Phase Angle / Burst / Single Cycle / IHC / Logic	Phase Angle / Burst / Mix (Burst/Phase Angle) / Single Cycle / IHC / Logic	Phase Angle / Burst / Mix (Burst/Phase Angle) / Single Cycle / IHC / Logic
Control	Voltage / Current Limitation	Voltage / Current / Open Loop	Voltage / Current / Power / Current Limitation / Open Loop / Transfer ControlLimitation	Voltage / Current / Power / Current Limitation / Open Loop / Transfer Control / Vrms Control / Irms Control
Alarm Diagnostic		Load Diagnostics / Network Diagnostics / Product Diagnostics	Load Diagnostics / Network Diagnostics / Product Diagnostics	Load Diagnostics / Network Diagnostics / Product Diagnostics
Certification	CE / UL/ EAC / CCC / ROSH	CE / UL/ EAC / CCC / ROSH	CE / UL/ EAC / CCC / ROSH	CE / UL/ EAC / CCC / ROSH

Machine and Process Automation Controllers

Programmable Automation Controllers	Visual Supervisor		PAC	
Features	**Eycon™ 10**	**Eycon™ 20**	**T2750**	**T2550**
Display Type	5.5" QVGA	12.1" XGA	Remote	
IP Rating	IP65		IP20	
Input Type	Remote		mV, V, mA, T/C, RTD, Potentiometer	
Analog IP/OP	Remote		In: 128 Out: 32	In: 64 Out: 32
Digital IP/OP	Remote		In/Out: 256	In/Out: 128
SP Programmer	8 Channels, 32 Segments each		8 Channels, 32 Segments each	
Batch	✓		✓	—
Recipe	✓		✓	
Auditor Features	✓		—	
Control	✓		✓	
Data Logging	✓		✓	
Ethernet (ELIN)	10/100Mbps		10/100Mbps	
Modbus (Serial & TCP)	Master/Slave		Master/Slave	
Profibus	Master		Master	Slave
Network Addressing	DHCP, Boot P, Link Local, Fixed		DHCP, Boot P, Link Local, Fixed	

Programmable Logic Controllers	Compact PLC	Modular PLC
Features	**E+PLC100**	**E+PLC400**
Autotuning PID	✓	✓
Setpoint Programmer	✓	✓
Tamper Resistant Recording	✓	✓
Archiving Strategy	✓	✓
Batch Management	✓	✓
Programming Platform	CODESYS (open)	CODESYS (open)
Programming Languages	IEC61131-3 compliant CFC, FBD, IL, LD, SFC, ST	IEC61131-3 compliant CFC, FBD, IL, LD, SFC, ST
Product I/O Dependant on build variant	AI(4), DI (3 max*) DO (2 max*) RLY (3 max*) DC Output (3 max*)	AI2, AI3, AI4, AI8, AO2, DI16, DO16, RLY8, ZI
I/O Expansion Method	Modbus	Modbus
Communications Protocols	FTP, Modbus TCP (Master/Slave),OPC-DA via PC based software	FTP, Modbus TCP (Master/Slave), Modbus Serial RTU (Master/Slave), OPC-DA via PV based software
Suitable for AMS2750E Process	✓	✓
Recording Duration (approx) Based on 4 chs at intervals at: 1s 10s 20s 60s	12.97 days 129.7 days 259.45 days 2.13 years	50.5 days 1.28 years 2.77 years 8.3 years
Panel HMI (Protocol)	Built in	E+HMI150 (OPC-DA) 07" and 13" size options
Web Visualization	✓	✓
Mounting	Panel	DIN

*Dependent on option board

Eurotherm Product Software

Typical configuration, data reporting, analysis and visualization capability from Eurotherm, and open industry standard IEC61131-3 CODESYS® PLC platform for Eurotherm E+PLC controllers.
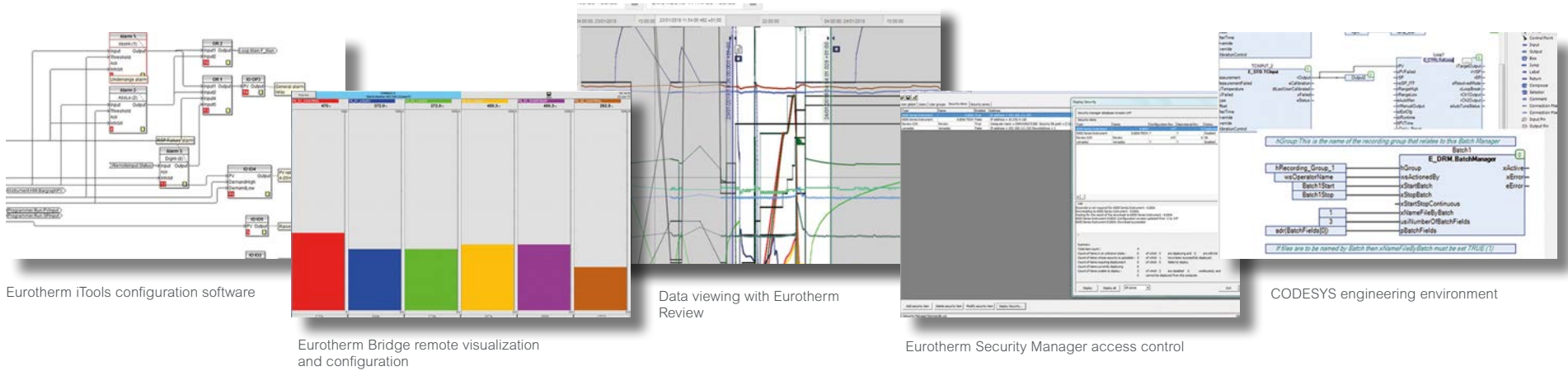
Eurotherm iTools configuration software

Eurotherm Bridge remote visualization and configuration

Data viewing with Eurotherm Review

Eurotherm Security Manager access control

CODESYS engineering environment

Configuration software	6000 Series software	Data Viewing/Reporting	Access Control	Combination PLC software
Eurotherm iTools	**Eurotherm Bridge**	**Eurotherm Data Reviewer**	**Security Manager**	**CODESYS®**
One versatile platform for configuration and monitoring of Eurotherm temperature and process controllers, power controllers and recorders.	A powerful yet easy to use tool providing visualization and configuration to any Eurotherm 6000 series instrument from any PC anywhere in the world.	Eurotherm Data Reviewer is a software application designed for the viewing, analysis and printing of historical data files acquired from Eurotherm data acquisition equipment such as, but not limited to: Paperless graphical recorders – 6000 series, hybrid recorders/controllers –nanodac™ recorder/controller range and Programmable Automation controllers - T2750 PAC.	A common tool across multiple ranges.	Eurotherm E+PLC use open industry standard IEC61131-3 CODESYS® PLC platform. This enables simplified engineering through a single integrated programming and visualization development environment which also offers OEM customization and user level access to help safeguard engineering intellectual property.
A complete engineering studio for configuration, data logging, communication and monitoring.	With the correct security access, the user can view any number of networked devices using the Local Area Network, intranet or internet.		Configures: • 6000 Series Recorder • Eycon Visual Supervisor • Operations Viewer • Eurotherm Review	

For more information and downloads go to your local Eurotherm website >software

Eurotherm System Software

Everyone talks about connecting the enterprise. Eurotherm® and Wonderware® have been doing it for years with a versatile suite of software tools including Wonderware System Platform and Wonderware PAC software built into our systems which offer:

Configuration tools	Visualization Packages	
Project Studio / Developer	**Process Viewer**	**Operation Server and Viewer**
• Engineering tools for process automation	• Low cost HMI	• Comprehensive user authorization and tamper resistance via Security Manager
• Single point configuration	• Use of iTools Active-X to visualize Eurotherm controllers	• Supports Ethernet, ARCnet and serial connections
• Integrated development environment	• Contains iTools and EuroMBUS OPC server environment	• Auditor features meet 21 CFR Part 11
	• LINtools and LIN OPC Server	

Data Reporting		
Information Manager	**Wonderware Historian client**	**Dream Report™**
Provides system connectivity between the Eurotherm control network and the enterprise.	Trending and analysis software provides plant data analysis and reporting solutions for Information Manager - giving better managed plant performance.	Integrated reporting solution for industrial automation. Designed to extract data from almost any data source and automatically provide reports to anybody anywhere.
• Captures and stores all plant data all of the time		
• Includes Wonderware Historian software		Dream Report fits perfectly for both continuous and batch process applications.
• Obtains data from our UHH with our Store & Forward functionality		

Network support	Applications	
OPC Servers and I/O Drivers for:	**Security Manager**	**Eurotherm Control and Application Modules**
• Single point configuration Modbus devices / I/O drivers	A common security tool across multiple ranges.	
• LIN devices	Configures:	• Standard supervisory workstation interface
• Wonderware SuiteLink™ protocol	• 6000 Series Recorder	• Standard library blocks
• Includes advanced communication diagnostic and monitoring tools.	• Eycon Visual Supervisor	• Operator faceplate
• WWPAC is provided to enable integrationof PAC instruments into Wonderware System Platform	• Operations Viewer	• Engineer point display
• Intellution FIX32 and iFIX	• Eurotherm Review	

• Reduced engineering effort with autobuild and single project environment

• Powerful graphic tools

• Instant access to data from you plant with online monitoring from any node

• OPC standards inbuilt to I/O drivers

• Built in Security Manager – without making operation and procedures cumbersome

• Built in technologies to meet requirements such as FDA 21 CFR Part 11 and AMS2750E
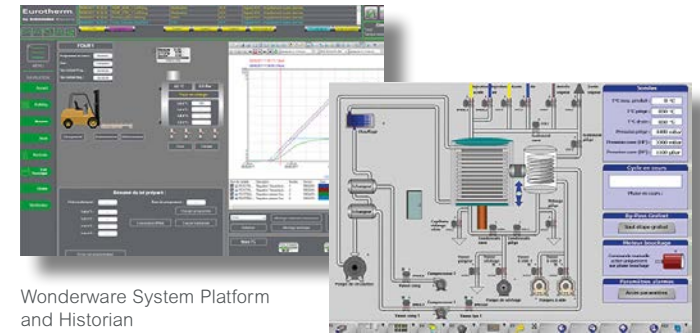
Wonderware System Platform and Historian

WSP - Typical process control overview screen - Freeze-drying
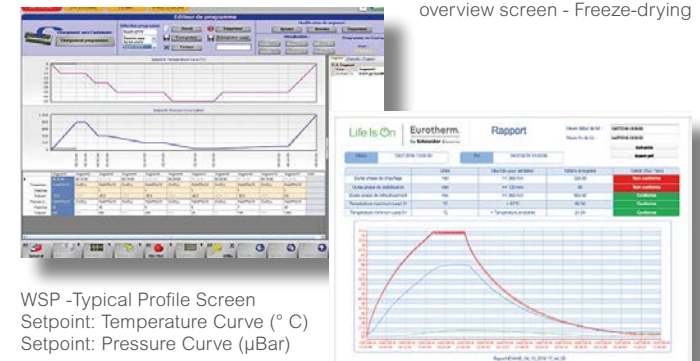
WSP -Typical Profile Screen
Setpoint: Temperature Curve (° C)
Setpoint: Pressure Curve (µBar)

Typical Eurotherm Dream Report. Phases of heat/cool, temperature and setpoint analysis.

For more information and downloads go to your local Eurotherm website > software Wonderware® is a registered trademark of Schneider Electric.

Signal Conditioners

Features	Signal Conversion and Isolation					
I/O Signal Conditioners						
	Ultra SlimPak II High Accuracy	**Ultra SlimPak Basic, Low Cost**	**Action I/Q*** **(AC/DC Powered)**	**Action I/Q*** **(Loop Powered)**	**OmniSLIM**	**TransPak***
Input Types	DC Volts/Current, RTD, mV, Thermocouple, Potentiometer, Strain Gauge, AC Volts/Current Frequency	DC Volts/Current, RTD, mV, Thermocouple, Potentiometer, Strain Gauge, AC Volts/Current Frequency	DC Volts/Current, RTD, mV, Thermocouple, Potentiometer, Strain Gauge, AC Volts/Current Frequency	DC Volts/Current, RTD, mV Thermocouple	DC Volts/Current, RTD, mV Thermocouple	DC Volts/Current, RTD, mV, Thermocouple, Potentiometer, Frequency
Output Types	0-10V dc, 0-20mA dc, 4-20mA dc or 2 SPDT relays	0-5V dc, 0-10V dc 0-1mA dc 0-20mA dc 4-20mA dc or 2 SPDT relays	-5 to +5 dc, -10 to +10Vdc 0-1mA dc, 0-20mA dc, 4-20mA dc or Frequency or 2 SPDT relay(s)	4-20mA dc 0-20mA dc	0-20mA 4-20mA dc 0.5V dc	1-20mA dc 4-20mAa dc 10-50mA dc
Isolation	1800VDC Input/Output Power	1800VDC Input/Output Power	1800VDC Input/Output Power	1800VDC Input/Output Power & channel/channel	2500V Input/Output Power & channel/channel	1800 VDC 600 VDC Varies with product
Power	9-30V dc via Terminals or jumpers	9-30V dc G448 18-30V (For DC Modules)	85-265V ac Various Power Product dependant 9-30V dc, 18-30V dc (Q448) 10.8-26.4V dc (Q404)	N/A	Loop or 16.8 to 31.2V dc	Varies by Model
Mounting	High density DIN rail	High density DIN rail	IQRL Power bus or DIN rail both AC DC	DIN rail	DIN rail	Field mount housing or head or DIN rail
Wiring	Removable terminals	Fixed terminals	Removable terminals	Removable terminals	Fixed terminals	Fixed terminals
Special Features	Smart Power	ASIC Reliability	2 ch versions, Signal splitters, Math functions, Field configurable I/P type versions	Multi Channel versions	Splitter, Isolation, Linearisation	Optional display, HART, 2 I/P channels with math
Calibration via	TouchCal	Potentiometer, G478 TouchCal	TouchCal	Potentiometer	Lifetime cal	Potentiometer

* *For Sale in North America Only.*

Signal Conditioners

I/O Signal Conditioners	Eclipse Series	Signal Conversion and Isolation	
Features	AC Transducers*	VisiPak	ActionPak AP*
Input Types	AC Power, AC Current, AC Voltage, AC Frequency, Phase Angle, Potentiometer, Tap Position	DC/Current, RTD, Thermocouple, Potentiometer, Strain Gauge, Frequency	DC/Current, RTD, Thermocouple, Potentiometer, Strain Gauge, AC Volts/Current Frequency
Output Types	0-1mA, 0-10mA, 0 -20mA, 4-20mA 0-10V plus others	2A, 264VAC Resistive Relays, Loop-Powered LCD indicator	-5+5Vdc, -10+10Vdc, 0-20mAdc 4-20mAdc, 2 SPDT realys
Isolation	2kV to IEC414	500Vdc Input/Output/Power	1000-1500Vdc Input/Output/Power
Power	Varies by Model	120-240Vac via Terminals, 85-265Vac	120-240Vac via Terminals, 9-30Vdc (Optional)
Mounting	DIN rail	Front Panel/Enclosure	Plug-in-8-Pin or 11-Pin Base Socket, High Density DIN rail
Wiring	Fixed terminals	Fixed terminals	Fixed terminals
Special Features	Stand alone 4kV Isolation (option)	Loop-Power, Provides a Digital Display of Rate or Totalized Count from a Frequency / Pulse input	Frequency divider, DC to Frequency conversation
Calibration via	—	Potentiometer	Potentiometer

* *For Sale in North America Only.*

Ancillary Equipment

Probes	Probes
Features	**In-Situ Carbon Probe AP1**
Output	1.00-2.00V dc
Readout	% carbon probe into 8MΩ
Power Supply	—
Power Consumption	—
Accuracy	±0.05 weight % carbon in normal operating range
Response Time	Less than 1.0 second
Thermocouple	Type K, R & S
Isolation	—
Ports	—
Port Parameters	—
Mounting	—
Options	—

Field Calibrators	Multifunction Temperature Calibrator
Features	**Memocal 2000**
24V Loop Power Supply	✓
Accuracy	±0.015% of span
Calibration Software	—
Input/Output Type	15 type TC - 2 type RTD - mV - Ma Ohms
Leather carrying case	Option
Multi Channel Data Logging	—
Power Supply	External charge and rechargeable Ni Mh batteries
Programmable Ramp Generator	✓
Real Time Clock with Memory	—
Serial Comm. Port	EIA 232 Modbus
Standard	Complies with AMS2750 field instrument
Panel size (DIN)	One channel IN/OUT
Display Type	Multifuncion LCD

* Sensors should be used with controlling, recording and indicating instruments having an input impedance of 10 meg ohms or higher.

Actuators

Valve Assemblies and Components	Valve Actuators								
Features	**EA01/EA02** *	**EA12** *	**EA20 Series** *	**EA31** *	**EA40 Series** *	**EA50 Series** *	**EA60 Series** *	**EA70 Series** *
Output Types	24V ac 50-60Hz 120V ac 50-60 Hz 240V ac 50-60Hz	24V ac 60Hz 120V ac 60Hz 240V ac 60Hz	120V ac 60Hz 240V ac 60Hz 240V ac 50Hz	24V ac 60Hz 120V ac 60Hz 240V ac 60Hz	120V ac 60Hz 240V ac 60Hz 240V ac 50Hz	24V ac 60Hz 120V ac 60Hz 120V ac 60Hz 240V ac 60Hz 240V ac 50Hz	120V ac 50-60Hz	120V ac 60Hz 120V ac 50Hz
4-20m A Input	Selected Models	No	Optional	No	Optional	Optional	Optinoal	Optional
Auxillary Switches	No	1 Optional	1 Standard additional 2 or 4 switches optional	1 Standard additional 2 or 4 switches optional	1 Standard additional 2 or 4 switches optional	1 Standard additional 2 or 4 switches optional	1 Standard additional 2 or 4 switches optional	1 Standard additional 2 or 4 switches optional
Position Signal	No	No	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional
90° Stroke	✓	—	✓	—	✓	✓	✓	✓
180° Stroke	—	✓	✓	—	✓	✓	✓	✓
360° Stroke	—	—	—	✓	—	—	—	—
Linear Stroke	—	—	—	—	—	—	—	—
Torque	150-300lb-in	60lb-in	50lb-in	220lb-in	50lb-in	60-220lb-in	450lb-in	550-1300lb-in
NEMA Rating	NEMA4	NEMA1	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)	NEMA 3 (Selected Models)	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)
UL Listed	✓	✓	✓	✓	✓	✓	—	✓
CUL or CSA	✓	✓	✓	✓	✓	✓	—	✓
CE	Selected Models	—	—	—	—	—	—	—

* *For Sale in North America Only.*

EcoStruxure™ Manufacturing Compliance Advisor

A cloud-hosted digital services platform designed to reduce costs, increase productivity and be audit-ready thanks to an unusually robust testing and approval process.

EcoStruxure™, open, inter-operable, IoT-enabled system architecture and platform connects best-in-class operational technology (OT) solutions with the latest in information technology (IT) to unlock trapped value in your operations and leverage the true potential of the Internet of Things.

How Does a Digital Tool Improve the Operational Efficiency of Production?

Improve Energy Efficiency

Poorly calibrated instruments may lead to increased energy requirements, as the process may require additional energy to achieve setpoint or result in poor quality finished products.

Minimize Testing Costs

Reduce testing costs. Simplify the data collection, approval and distribution workflow. Centralize test and compliance management, planning & performing tests of any type. A flexible and collaborative, role-based service delivery.

Increase Test Productivity

Reduce test errors and re-testing with dedicated workflows and prescribed work instructions. Avoid production disruptions and downtime by efficiently managing complex test schedules. Integrate with existing systems and workflows with optional API integration.
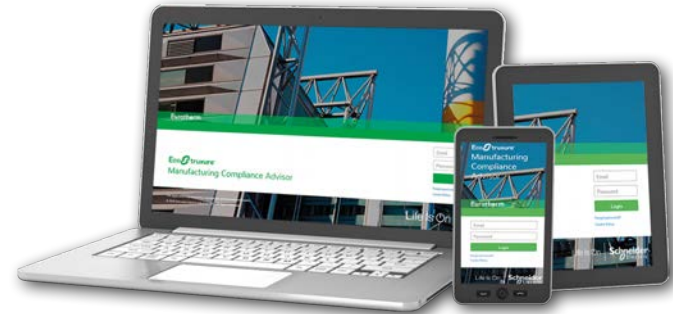
EcoStruxure Manufacturing Compliance Advisor enables end-users and their service supply chain to manage asset testing & calibration activity. This allows them to:

- Optimize manufacturing process equipment and surrounding plant facility

- Always be prepared for an audit, with instant access to test documentation via a QR code

Efficiently manage compliance requirements and enjoy instant online access to your data* – affordably and reliably. Anywhere, anytime.

*Terms of Service - click here

EcoStruxure : IoT-enabled Architecture and Platform

EcoStruxure™
Innovation At Every Level

Optimize through digital transformation

Schneider Electric is leading the digital transformation of industrial automation markets. Delivered through our EcoStruxure™ architecture, our IIoT technologies, including integrated software, are ready for smart manufacturing and can deliver new business opportunities for plants and machine builders – increasing profitability and productivity.

EcoStruxure enables Schneider Electric, our partners, and end-user customers to develop scalable and converged IT/OT solutions that maximize energy efficiency and sustainability through smarter systems and real-time, data-driven decisions.

EcoStruxure Manufacturing Compliance Advisor

Manage compliance and calibration requirements efficiently

EcoStruxure Manufacturing Compliance Advisor is a tool to efficiently manage compliance and calibration requirements. The platform is designed to aid cost reduction, increase productivity and always be ready for an audit thanks to a robust test and approval process. Ultimately this leads to greater energy efficiency and better test productivity, which then helps in reducing operating costs and maintaining compliance to regulations.

EcoStruxure™ Augmented Operator Advisor

Increase efficiency and decrease costs: Augmented reality for instant diagnosis and contact-less maintenance

Put real-time information at your fingertips, whenever and whereever it is needed. The custom application improves operational efficiency with augmented reality, enabling operators to superimpose their current data and virtual objects onto a cabinet, machine, or plant.

EcoStruxure™ Power Monitoring Expert

Gain valuable insight into your power network

Power Monitoring Expert gives insight into electrical system health and energy efficiency, so you can make informed decisions to improve power system performance. With its open, scalable architecture, PME connects to smart devices across your electrical system – power and energy meters, protective relays and circuit breakers, RTUs and PLCs, VSDs, UPS, and PQ mitigation equipment – and integrates with process control systems and many other enterprise platforms.

EcoStruxure™ Machine Advisor

Digital services for machines

EcoStruxure™ Machine Advisor is a cloud-based services platform for machine builders. Track machines in operation worldwide, monitor performance data and fix exceptional events, while reducing support costs by up to 50%.

Systems and Solutions (available globally)

What can Eurotherm solutions do for you?

Confidence in our application knowledge

Confidence in our control products and systems capability

Confidence in optimizing value for money

We provide an expert team to work with your people in a successful partnership.

We know your application

Eurotherm has significant experience in machine control and process control across a broad range of markets. Based on our application specific expertise, we have numerous successful installations around the world. The more challenging your control problem, the more value we bring.

Our core competency is process control applications and this expertise is what separates us from the typical system integrator.
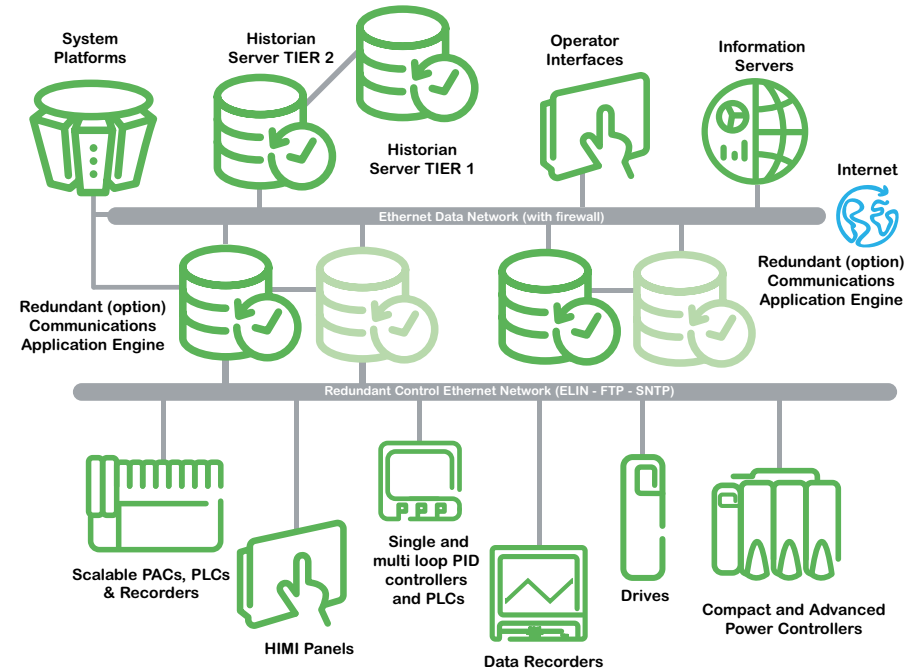
Thermal solution architecture

Global Turnkey Capability

In addition to Eurotherm expertise in process and machine control products, we also have a broad range of experience and engineering services to implement a complete solution for your application.

These services include:

Engineering Services

- Custom engineered solutions
  - discrete instrumentation up to small and medium DCS systems
- Creating collaborative specifications
- System design
- System engineering
- Panel & cabinet building
- System Accuracy Test
- Factory Acceptance Testing (FAT)
- On-site installation & wiring services

- System installation, commissioning & startup services
- Validation IQ, OQ, PQ
- Comprehensive project management (including GAMP®5 & 21 CFR Part 11 Methodologies)
- Complete project documentation
- Network analysis
- Custom reports
- Analytics

Process Optimization

Most businesses are driving down costs and striving to improve performance. We can help by bringing experienced engineers to your site, auditing the process and identifying possible improvements. Monitoring equipment can be installed to understand performance and costs, to create a baseline upon which the improvements can be measured. The solutions will range from simple enhancements, re-commissioning or possibly taking a completely fresh approach to the control solution. Typically, this work is completed when new projects are undertaken, but we believe that applying the experience of our engineers can improve the plant productivity at any time.

Service and Support

Check region for availability.

Technical Services

- Free telephone and web based support via dedicated help desk
- Extended warranties available
- Loop tuning and optimization
- Business continuity plans
- Service Level Agreements

  — Breakdown: 24hr cover 7 days a week including response to site
  — Parts management, including bonded spares placed on site
  — Preventative maintenance and health checks
  — Remote diagnostic support
  — Disaster and recovery plan
  — Software and application support
  — Process and diagnostic predictive service
  — Global telephone support 24/7
  — Future proofing service, Asset always compliant with latest software and hardware

Accredited Services

- Calibration: electrical, pressure, time, temperature and humidity
- Thermal Uniformity Surveys: (TUS) ovens, furnaces, freezers, chambers and System Accuracy Tests (SAT)
- Thermal Imaging

EcoStruxure Manufacturing Compliance Advisor

- Software as a Service (SaaS) - see page | 19 for details

Validation Services (GAMP)

- Auditing and consultation
- Complete validation to GAMP®5 guidelines & 21 CFR Part 11 requirements
- Services to produce documentation for validation include:

  — User requirements, functional specification and design specifications
  — System build
  — Installation, operational and performance qualifications
- Services to maintain the validated state including:
  — Calibration
  — Like-for-like parts management to minimize revalidation effort
  — Controlled installation of patches and upgrades
  — System operation and administration
  — Backups and recovery solutions
  — Training for system operators and administrators

Repair and Support Services

Eurotherm products repaired. Mandatory hardware and software upgrades applied as required.

For further information please contact repairs.eurotherm.us@se.com
Phone: +1 703 724 7313

Training, Commissioning and Troubleshooting

Training

- Formal classroom based including bespoke courses

- Informal hands-on "question & answer" at customer site

- Self-paced training modules

- Book webinars online

Visit our website to view all available training and book your slot on our webinars: eurotherm.com/training

Commissioning and Troubleshooting

Our commissioning services include everything from configuring an instrument before it is shipped, though to on-site installation, troubleshooting startup and optimization. During this process your staff can be trained on the configuration and operator routine. Our engineers can work alone, or alongside your plant engineering staff to reduce costs and enable valuable knowledge transfer.

Refurbishing existing panels to upgrade the control and acquisition equipment is becoming increasingly popular. The Eurotherm engineer will take control of the complete project including panel and wiring modifications. This can provide a cost efficient method of gaining compliance to regulatory standards from ANSI, NADCAP and FDA.

Life Is On | **Schneider Electric**

Contact us and request a demo
from your local sales team.

eurotherm.com