

PID Controllers, Indicators and Alarm Units

Single Loop	Modular DIN Mount Controller												
	piccolo™			3000 Series				EPC3000			3000 Series		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 plus4 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 fault,, 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

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Advanced and Multi Loop	Recorder/ Controller	Discrete Panel Mount Controllers				Modular DIN Mount Controller
						
Features	nanodac™	3000 Series		2000 Series		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, Profibus, 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

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PID Controllers, Indicators and Alarm Units

Indicators and Alarm Units	3000 Series			2000 Series
	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

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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	✓	✓
Transducer 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