



I/O Signal Conditioning	Action Instruments						Eclipse Series
							
Features	Ultra SlimPak II	Ultra SlimPak	Action I/Q (AC Powered)	Action I/Q (DC Powered)	Action I/Q (Loop Powered)	TransPak	AC Transducers
<b>Input Types</b>	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, Potentiometer, Strain Gauge, AC Volts/Current, Frequency	DC Volts/Current, RTD, mV, Thermocouple	DC Volts/Current, RTD, mV, Thermocouple, Potentiometer, AC Volts/Current, Frequency	AC Power, AC Current, AC Voltage, AC Frequency, Phase Angle, Potentiometer/ Tap Position
<b>Output Types</b>	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	0-5V dc, 0-10V dc, 0-1mA 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, Frequency, or 1/2 SPDT relay(s)	4-20mA dc	4-20mA dc	0-1mA, 0-10mA, 0-20mA, 4-20mA, 0-10V plus others
<b>Isolation</b>	1800V Input/Output/Power	1800V Input/Output/Power	1800V Input/Output/Power	1800V Input/Output/Power	1800V Input/Output and channel/channel	Varies with product	2kV to IEC414
<b>Power</b>	9-30V dc via Terminals or jumpers	9-30V dc G448 18-30V	100-204V ac	Various power Product dependant 9-30V dc 18-30V dc 10.8-26.4V dc	10-35V ac	Varies by Model	Varies by Model
<b>Mounting</b>	High density DIN rail	High density DIN rail	IQRL power bus on DIN rail	DIN rail or IQRL power bus	DIN rail	Field mount housing or head or DIN rail	DIN rail
<b>Wiring</b>	Removable terminals	Fixed terminals	Removable terminals	Removable terminals	Removable terminals	Fixed terminals	Fixed terminals
<b>Special Features</b>	Smart power, Ethernet communications	ASIC reliability	2 ch versions, Signal splitters, Field configurable I/P type versions	2 ch versions, Signal splitter, Math functions, Field configurable I/P type versions	Multi channel versions	Optional display, HART, 2 I/P channels with math	Stand alone 4kV isolation (option)
<b>Calibration via</b>	TouchCal	Potentiometer	TouchCal	TouchCal	Potentiometer	Potentiometer or software	n/a
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Probes Thermosensors Ancillary (Other)	Probes		Thermosensors	Ancillary	
					
Features	In-Situ Carbon Probe – AP1	In-Situ Oxygen Probe – AP3	Thermocouple & Resistance Thermometers (RTDs)	MEMOCAL 2000	Universal Isolated Interface Converter – KD485
<b>Output</b>	1.00-2.00V dc	Up to 500mV	n/a	mA, V, TC, RTD	n/a
<b>Readout</b>	% carbon probe into 8MΩ	% oxygen probe 10MΩ	n/a	Multi function LCD	n/a
<b>Power Supply</b>	n/a	n/a	n/a	Battery	+7 - +35V dc
<b>Power Consumption</b>	n/a	n/a	n/a	n/a	n/a
<b>Accuracy</b>	±0.05 weight % carbon in normal operating range	±0.02 PPM O <sub>2</sub> at 1 PPM O <sub>2</sub> ±1% of full scale mV output	n/a	0.015% of span	n/a
<b>Response Time</b>	Less than 1.0 second	Less than 1.0 second	n/a	n/a	n/a
<b>Thermocouple</b>	Type K, R & S	Type K, R S & B	General purpose	Type B, E, J, K, L, N, R, S, T, U, W, W3, W5, PLII	n/a
<b>Isolation</b>	n/a	n/a	n/a	n/a	2000V ac
<b>Ports</b>	n/a	n/a	n/a	EIA232	2 Asynchronous ports, TX & RX signals only
<b>Port Parameters</b>	n/a	n/a	n/a	Remote programming Data recording	-STD: 0-115200 baud, all character formats -ADE/PROG: 30-115200 baud, n/e/o/ parity, 7/8 data bits, 1/2 stop bits
<b>Mounting</b>	n/a	n/a	n/a	Hand held	DIN Rail
<b>Options</b>	n/a	n/a	Sensor fittings, Connectors, Wires and cables	EIA232 comms Desk top adapter (with EIA485 comms)	Interface: Standard product Port 1 is RS232 Port 2 is RS422/485 Any combination of RS232, 422/485
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## Valve Actuators & Sensors








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I/O Signal

Other

Valve Actuators	EA Series								
									
Features	EA01/EA02	EA12	EA20 Series	EA31	EA40 Series	EA50 Series	EA60 Series	EA70 Series	MF-631x3
<b>Output Types</b>	24V ac 50-60Hz 120V ac 50-60Hz 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 dc 60Hz 120V ac 50Hz 240V ac 60Hz 240V ac 50Hz	120V ac 50-60Hz	120V ac 60Hz 120V ac 50Hz	24V ac 50-60Hz
<b>4-20mA Input</b>	Selected Models	No	Optional	No	Optional	Optional	Optional	Optional	Optional
<b>Auxiliary Switces</b>	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	1 Standard
<b>Position Signal</b>	No	No	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional	Potentiometer optional	No
<b>90° Stroke</b>	•	none	•	none	•	•	•	•	none
<b>180° Stroke</b>	none	•	•	none	•	•	•	•	none
<b>360° Stroke</b>	none	none	none	•	none	none	none	none	none
<b>Linear Stroke</b>	none	none	none	none	none	none	none	none	•
<b>Torque</b>	150-300lb-in	60lb-in	50lb-in	220lb-in	50lb-in	60-220lb-in	450lb-in	550-1300lb-in	none
<b>NEMA Rating</b>	NEMA 4	NEMA 1	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)	NEMA 3 (Selected Models)	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)	NEMA 4 (Selected Models)	NEMA 1
<b>UL Listed</b>	•	•	•	•	•	•	none	•	•
<b>CUL or CSA</b>	•	•	•	•	•	•	none	•	•
<b>CE</b>	Selected Models	none	none	none	none	none	none	none	•

For further information contact your local Sales Office

Sensors							
Features	Plastic Industry	Industrial	Resistance Temperature Detectors	MgO Insulated	Thermowell Assemblies	Oxygen Sensors	Carbon Sensors
<b>Input Types</b>	Thermocouple RTD Type J, K, E, T PT100 (.00385) JIS (.00391)	Thermocouple Type J, K, E, T, R, S, B	RTD PT100 (.00385) JIS (.00391)	Thermocouple Type J, K, E, T, S	Thermocouple RTD Type J, K, E, T PT100 (.00385) JIS (.00391)	O2 Cell plus Thermocouple Type R, S, B Zirconia	O2 Cell plus Thermocouple Type K, R, S Zirconia
<b>Sheath or Protection Tube</b>	304 S.S.	Steel pipe, 304 S.S., 316 S.S., Inconel, Cast iron, Silicon carbide, Mullite, Alumina, Others	304 S.S., 316 S.S., Inconel	304 S.S., 316 S.S., Inconel	304 S.S., 316 S.S., C-1018 Steel, Brass, Others	Alumina	3/4" NPT Schedule RA 330
<b>Mounting Fitting</b>	Bayonet fitting, Compression fitting	Welding bushing, Flange, Sleeve, Double-ended bushing	Compression fitting double-ended bushing, Spring loaded double-ended bushing	Compression fitting double-ended bushing, Spring loaded double-ended bushing	Male NPT threads, Weld in, Flange	Sliding flange 1" NPT, Compression fitting	Sliding flange 1" NPT, Compression fitting
<b>Insulation</b>	Fiberglass	Ceramic	Teflon, Fiberglass	Magnesium oxide	Ceramic, Magnesium oxide, Teflon, Fiberglass	Alumina	Alumina
<b>Transmitter Available</b>	No	No	Yes	Yes	Yes	No	No
<b>Termination</b>	Stripped leads, Spade terminals, Plug, Jack, Plug and jack	Cast iron head, Aluminum head, Explosion proof head	Stripped leads, Spade terminals, Plug, Jack, Plug and jack Cast iron head, Aluminum head, Explosion proof head	Stripped leads, Spade terminals, Plug, Jack, Plug and jack Cast iron head, Aluminum head, Explosion proof head	Cast iron head, Aluminum head, Explosion proof head	Aluminum head	Aluminum head

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