Sequence Controllers - Alpha2 Series

Controllable I/O: 14 - 28 points
Main Unit I/O: 14/24 points

Alpha2 Main Units

Model Number		AL2-10MR-A	AL2-10MR-D	AL2-14MR-A	AL2-14MR-D	AL2-24MR-A	AL2-24MR-D
Stocked Item		S	S	S	S	S	S
Certification		UL • cUL • CE (EMC)					
Integrated Inputs/Outputs		10	10	14	14	24	24
Digital Inputs		6	6	8	8	15	15
Analog Inputs		-	6	-	8	-	8
Channels		-	6	-	8	-	8
Integrated Outputs		4	4	6	6	9	9
Max. Power Consumption (W)		4.9	4.0	5.5	7.5	7.0	9.0
Typical Power Consumption	All I/O (W)	3.5 / 1.85 240VAC	2.5/0.75	4.5 / 2.0 240VAC	4.0 / 1.0	5.5 / 2.5 240VAC	5.0 / 1.0
	ON – OFF (W)	3.0 / 1.55 120VAC		3.5 / 1.5 120VAC		4.5 / 2.0 120VAC	
Weight (kg)		0.2	0.2	0.3	0.3	0.35	0.3
Dimensions (W x D x H) mm		71.2 x 90 x 52	71.2 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52

Environmental Specifications

General Specifications		Alpha2
Ambient Temperature		Display: -10 to 55°C, Hardware: -25 to 55°C (storage temperature: -30 to +70°C)
Protection Rating		IP20
Noise Immunity		1000 Vpp with noise generator; 1µs at 30 - 100 Hz, tested by noise simulator
Dielectric Withstand Voltage		3750VAC, >1 min. according to EN60730
Allowable Relative Humidity		35 - 85% (no condensation)
Shock Resistance		Complies to IEC 68-2-27: 147 m/s² acceleration, 11 ms 3 x 3 directions
Vibration Resistance	Direct Mounting	Complies to IEC-2-6: 19.6 m/s² acceleration, 80 min. in each direction
	DIN Rail Mounting	Complies to IEC-2-6: 9.8 m/s² acceleration, 80 min. in each direction
Insulation Resistance		500VDC, 7 MΩ Complies to EN60730-1
Ambient Conditions		No corrosive gasses, no dust

Electrical Specifications

Power Supply Specifications		DC Powered Models (AL2-_MR-D)	AC Powered Models (AL2-_MR-A)
Power Supply		24VDC (+20% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz
Inrush Current at ON		7.0A (at 24VDC)	6.5A (at 240VAC)
Allowable Momentary Power Failure Time		5 ms	10 ms
Digital Inputs			
Input Voltage		24VDC (+20% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz
Input Current		Sink: 5.5mA, 24VDC AL2-10MR-D (I01 - I06) AL2-14MR-D/AL2-24MR-D (I01 - I08/ I09 - I15) Source: 6.0mA, 24VDC AL2-10MR-D (I01 - I06) AL2-14MR-D/AL2-24MR-D (I01 - I08) Source: 5.5mA, 24VDC AL2-14MR-D/AL2-24MR-D (I09 - I15)	I01-I08 0.13mA / 120VAC (*1) 0.25mA / 240VAC (*1) I09 - I15 0.15mA / 120VAC (*1) 0.29mA / 240VAC (*1)
Response Time	OFF – ON	10 - 20 ms	35-85 ms, 120VAC 25-55 ms, 240VAC
	ON – OFF	10 - 20 ms	35-85 ms, 120VAC 50-130 ms, 240VAC
Analog Inputs		6 (10MR-D); 8 (14 & 24MR-D)	-
Analog Input Range		0-500	-
Resolution		9 bit, (10 V/500)	-
Conversion Speed		8	-
Input Voltage		0-10VDC	-
Input Impedance		142 ±5%	-
Accuracy		±5% (0.5VDC)	-

Note 1: Current leakage from sensors connected to the inputs might provide enough current to turn the controller ON. Do not use 2-wire sensors.

Output Specifications	Alpha2
Type	Relay
Switching Voltage (Max.)	250VAC, 30VDC
Rated Current	10M, 14M: 8A/com 24M (001-004): 8A/com 24M (005-009): 2A/point
Max. Switching Load - Inductive Load	14M, 24M: 249 VA/250VAC, 373 VA/250 24M: 93 VA/125VAC, 93 VA/250VAC
Minimum Load	10mA, 5 V DC
Response Time	<10 ms

Programming Specifications

System Specifications	Alpha2
Programming Method	Function block
Program Capacity	200 function blocks or 5000 bytes
Program Processing	Cyclic processing of the stored program
Number of Available Instructions	38 different function blocks
Program Storage	Integrated EEPROM and optional additional EEPROM cassette
Data Storage	At voltage loss the current status of values, running time meters, and real-time data are stored for up to 20 days (at temperatures of 0 to 25°C) using capacitors
Processing Time	1 ms + 20µs /logic instruction (complex commands 500/µs instruction)
Real-Time Clock	Seconds, minutes, hours, day of week, month, year (4-digit); accuracy: 5 s / day; automatic daylight savings time adjustment
Program Protection	3 levels using program and keys