



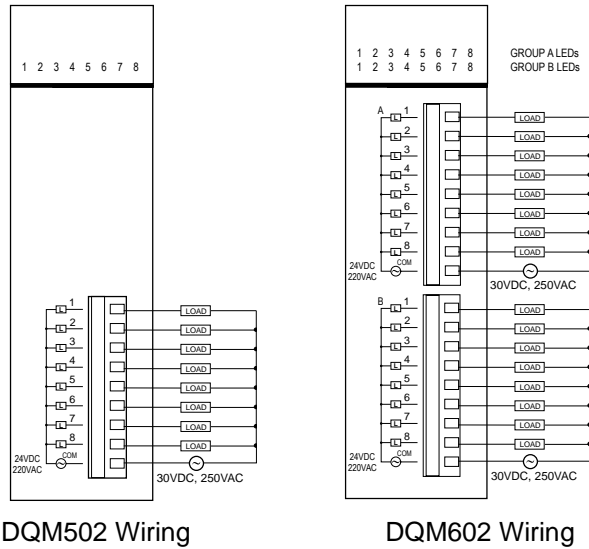
SmartRail

DC In / Relay Out & Relay Output Modules

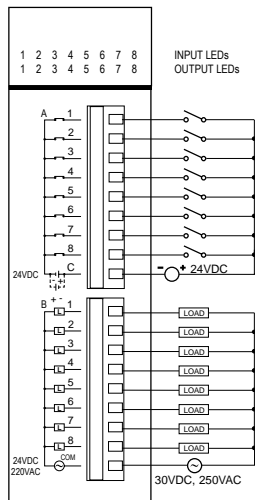
HE599DIQ512 (8+8pt), HE599DQM502 (8pt), HE599DQM602 (16pt) 2A/pt (5A/common)

1 Specifications

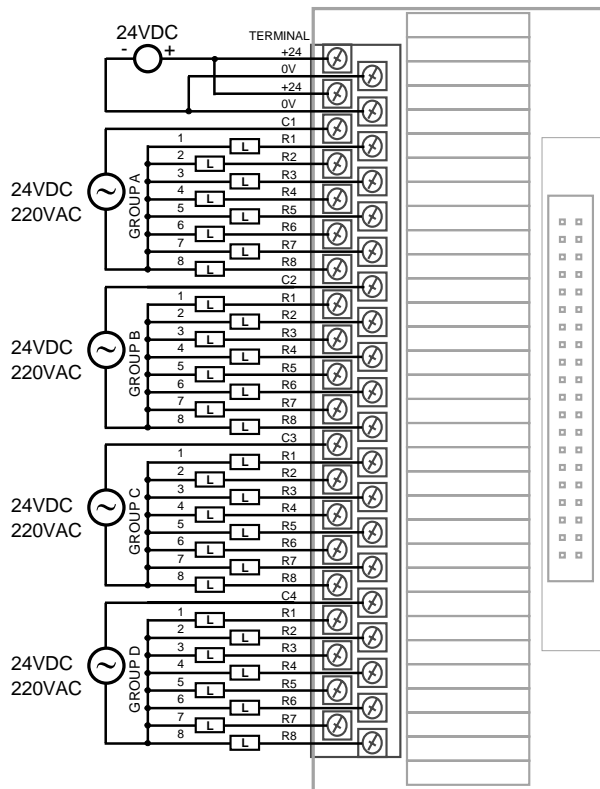
Inputs		Specifications			
Inputs (Commons)		DIQ512			
Input Voltage Range		24 VDC (20.4 – 28.8 VDC)			
Rated Input Current		About 4mA			
Input Resistance		Approx. 5.6kΩ			
Isolation		500VDC or greater			
ON/OFF Voltage (Current) Levels		ON: >19VDC (>3mA) OFF: <6VDC (<1mA)			
Response Time		Configurable for 1/3/5/10/20/70/100mS			
Outputs		DIQ512	DQM502	DQM602	RLY037
Outputs (Commons)		8 (1)	8 (1)	16 (2)	32 (4)
Max DC Output Voltage		125Vdc			24Vdc
Max AC Output Voltage		250Vac			220Vac
Rated Output Current		2A/point, 5A/common			
Minimum Output		5Vdc, 1mA			
Off Leakage Current		0.1mA or less			
Response Time		10mS OFF>ON, 12mS ON>OFF			
Life		20 million cycles mechanical 100,000 cycles minimum at rated load			
General		DIQ512	DQM502	DQM602	RLY037
LED indication		Labeled 1-8 for each I/O group			
Backplane Power Consumed @5V		280mA	230mA	420mA	120mA*
Terminal Type		M2 Screw Type, Removable			M3 fixed
Number of Terminals		9 + 9	9	9 + 9	40
Optional Spring Clamp Terminal Strip		HE599TRM009, Quantity 2 (Qty 1 for HE599DQM502)			None
Terminal Torque Rating		0.22 to 0.25 N-m 1.95 to 2.21 in-lb		1.2 N-m 10.6 in-lb	
Accepted Wire Size		16-28AWG			
Wiring Stripping Length		7mm			
Storage Temp.		-25° to 70° Celsius			
Operating Temp.		-0° to 55° Celsius			
Relative Humidity		5 to 95% Non-condensing			
Dimensions DIQ & DQM		27 x 90 x 60 mm (1.06 x 3.54 x 2.36 in)			
Dimensions RLY037		174 x 70 x 38 (3.14 x 2.76 x 1.50 in)			
Weight		80g (2.8 oz.)	80g (2.8 oz.)	130g (4.9 oz.)	375g (13.2 oz.)
Certifications		North America or European website			



2 Wiring - I/O



DIQ512 Wiring



RLY037 Wiring
using a HE599DQM706 32pt DC output module and SmartLink Wiring Accessories

2.1 Output Wiring Terminals

Group	Output	DQM502 Terminal	DQM602 Terminal	RLY037 Pin
A	1	9posn – Terminal 1	9(1)posn – Terminal 1	R1
	2	9posn – Terminal 2	9(1)posn – Terminal 2	R2
	3	9posn – Terminal 3	9(1)posn – Terminal 3	R3
	4	9posn – Terminal 4	9(1)posn – Terminal 4	R4
	5	9posn – Terminal 5	9(1)posn – Terminal 5	R5
	6	9posn – Terminal 6	9(1)posn – Terminal 6	R6
	7	9posn – Terminal 7	9(1)posn – Terminal 7	R7
	8	9posn – Terminal 8	9(1)posn – Terminal 8	R8
Common 1		9posn – Terminal 9	9(1)posn – Terminal 9	C1
B	1	N/A	9(2)posn – Terminal 1	R1
	2		9(2)posn – Terminal 2	R2
	3		9(2)posn – Terminal 3	R3
	4		9(2)posn – Terminal 4	R4
	5		9(2)posn – Terminal 5	R5
	6		9(2)posn – Terminal 6	R6
	7		9(2)posn – Terminal 7	R7
	8		9(2)posn – Terminal 8	R8
Common 2			9(2)posn – Terminal 9	C2
C	1	N/A	N/A	R1
	2			R2
	3			R3
	4			R4
	5			R5
	6			R6
	7			R7
	8			R8
Common 3				C3
D	1	N/A	N/A	R1
	2			R2
	3			R3
	4			R4
	5			R5
	6			R6
	7			R7
	8			R8
Common 4				C4

2.2 SmartLink Wiring Accessories

To achieve the highest density relay outputs with the SmartRail I/O system, the SmartLink Relay Output Terminal is used. This is a DIN-rail mounted device which features 32 socketed relays. The RLY037 does not sit directly on the SmartRail backplane, but connects to a HE599DQM706 DC output module with a special round cable. This cable is available in 0.5m or 2.0m lengths. The table below lists the part numbers for the SmartRail I/O module and SmartLink Wiring Accessories required for highest relay density.

SmartLink Wiring Accessories	
Description	Part Number
32pt DC Output Module	HE599DQM706
32pt DIN-rail mounted Relay Output Terminal	HE599RLY037
0.5m Cable for RLY037	HE599CBL037
2.0m Cable for RLY037	HE599CBL237

3 Configuration DATA

SmartRail I/O modules with digital outputs are configurable to “hold last state” if desired – when communications is lost with the controlling CPU. This is not configurable on a point-by-point basis, but rather by a group-by-group basis (8points/group). Cscape (9.1 or later) is required for configuration:

Cscape Configuration Data – Selectable per Group				
Parameter	Selections	DIQ512/ DQM502	DQM602	DQM706
Hold Last State (Yes or No)	Group A (outputs 1-8)	X	X	X
	Group B (outputs 9-16)	N/A	X	X
	Group C (outputs 17-24)		N/A	X
	Group D (outputs 25-32)			X

SmartRail I/O modules with digital inputs feature a configurable input filter:

Cscape Configuration Data – Selectable per Module	
Parameter	DIQ512 Selections
Input Response	1ms
	3ms
	5ms
	10ms
	20ms
	100ms

4 Installation / safety

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or Non-hazardous locations only

WARNING - EXPLOSION HAZARD -

Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous

WARNING - EXPLOSION HAZARD -

Substitution of any component may impair suitability for Class I, Division 2

WARNING – POSSIBLE EQUIPMENT DAMAGE

Remove power from the I/O Base and any peripheral equipment connected to this local system before adding or replacing this or any module.

- a. All applicable codes and standards should be followed in the installation of this product.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using.

When found on the product, the following symbols specify:



5 Technical Support

Technical Support at the following locations:

North America: Tel: 317 916-4274 Fax: 317 639-4279 Web: http://www.hornerautomation.com Email: techspt@heapg.com	Europe: Tel: +353-21-4321266 Fax: +353-21-4321826 Web: http://www.hornerautomation.eu Email: tech.support@horner-apg.com
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