



SmartRail

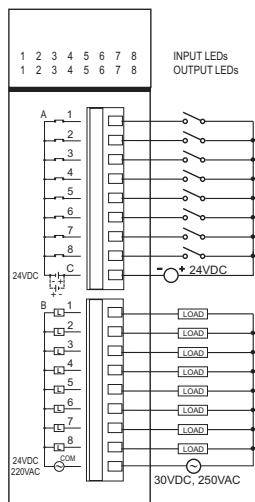
DC In / Relay Out & Relay Output Modules

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

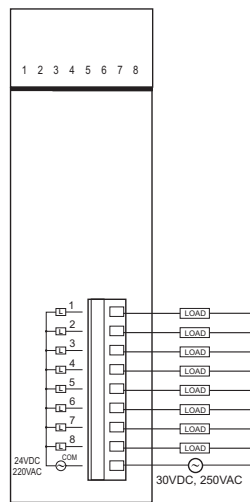
1 Specifications

Specifications	
Inputs	DIQ512
Inputs (Commons)	8 (1)
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
Max AC Output Voltage	250Vac
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
Number of Terminals	9 + 9 9 9 + 9 40
Optional Spring Clamp Terminal Strip	HE599TRM009, Quantity 2 (Qty 1 for HE599DQM502)
Terminal Torque Rating	0.22 to 0.25 N-m 1.95 to 2.21 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.)
CE & UL Compliance	CE, UL & C-UL Class I, Div 2 Groups A, B, C & D

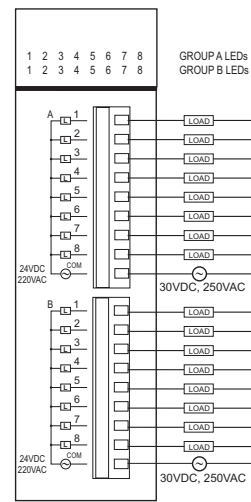
2 Wiring – I/O



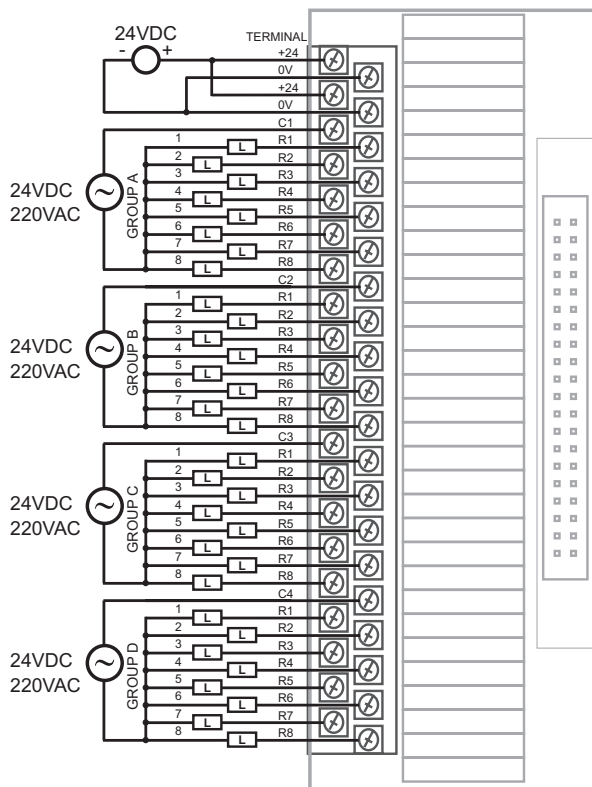
DIQ512 Wiring



DQM502 Wiring



DQM602 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.heapg.com Email: techsppt@heapg.com	Europe: Tel: +353-21-4321266 Fax: +353-21-4321826 Web: http://www.horner-apg.com Email: tech.support@horner-apg.com
--	---

No part of this publication may be reproduced without the prior agreement and written permission of Horner APG, Inc. Information in this document is subject to change without notice.