



SmartStix™ HE559DQM602

Remote I/O for the OCS/RCS Family

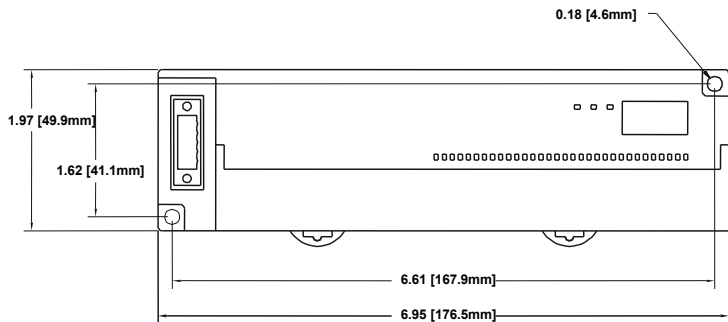
16 Relay Outputs (250VAC. 30VDC. 2.0A)

1 GENERAL SPECIFICATIONS

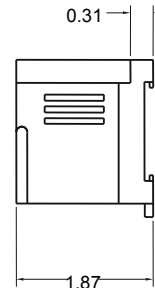
General Specifications				
Storage Temperature	-25° to 70° C	Operating and Storage Humidity	5 to 95% Non-condensing	
Operating Temperature	0° to 55° C	Pollution degree	2 or lower	
Atmosphere	Free from corrosive gases and excessive dust	Cooling method	Self-cooling	
Required Power		20.4 - 28.8V (Ripple less than 5%)		
Vibration				
Occasional Vibration				
Frequency	Acceleration	Amplitude	Sweep Count	
10 ≤ f < 57 Hz	-	0.075 mm	10 times in each direction for X,Y,Z	
57 ≤ f ≤ 150 Hz	9.8 m/s ² {1G}	-		
Continuous Vibration				
Frequency	Acceleration	Amplitude	Sweep Count	
10 ≤ f < 57 Hz	-	0.035 mm	10 times in each direction for X,Y,Z	
57 ≤ f ≤ 150 Hz	4.9 m/s ² {0.5G}	-		
Shocks				
Maximum shock acceleration	147 m/s ² {15G}			
Duration Time	11 ms.			
Pulse Wave	Half sine wave pulse (3 times in each of X, Y, Z directions)			
Noise Immunity				
Square wave impulse noise	AC: ± 1,500VDC DC: ± 900VDC			
Electrostatic Discharge	Voltage: 4kV (contact discharge)			
Radiated electromagnetic field	27 – 500MHz, 10V/m			
Fast Transient Burst Noise	Severity level	All power modules	Digital I/Os (Ue ≥ 24V)	Digital I/Os (Ue < 24 V) Analog I/Os Communication I/Os
	Voltage	2 kV	1 kV	0.25 kV

2 DIMENSIONS

a. DQM602



b. Terminal Strips



HE559-With Removable Strip

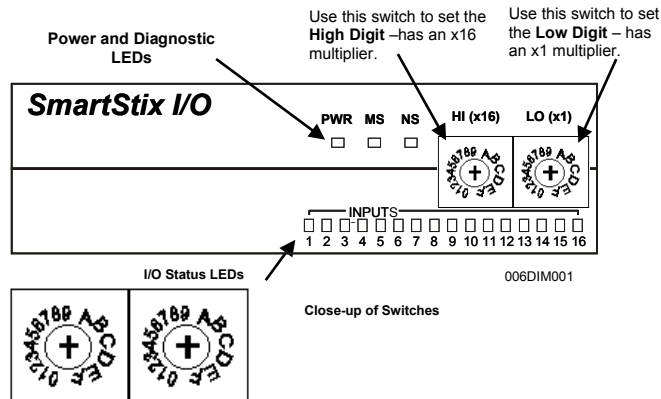
3 NETWORK CABLE

For detailed wiring information, refer to the Control Station Hardware Manual. A handy checklist is provided that covers panel box layout requirements and minimum clearances. See Section 10 for our web address.

Pin	Description	Recommended Cable	
RED	1 V+	Thick: (Max Distance = 500m)	Belden 3082A
WHT	2 CAN_H		
NC	3 No Connection	Thin: (Max Distance = 100m)	Belden 3084A
BLU	4 CAN_L		
BLK	5 V-		

4 ID SWITCHES (SETTING CSCAN NETWORK IDs)

CsCAN Network IDs are set using the hexadecimal number system from 01 to FD. The decimal equivalent is 1-253. Refer to Section 8, which shows the decimal equivalent of hexadecimal numbers. Set a unique Network ID by inserting a small Phillips screwdriver into the two *identical* switches. **Note:** The CsCAN Baud Rate for SmartStix I/O is fixed at 125KBaud.



5 LEDs

a. Diagnostic LED Indicators

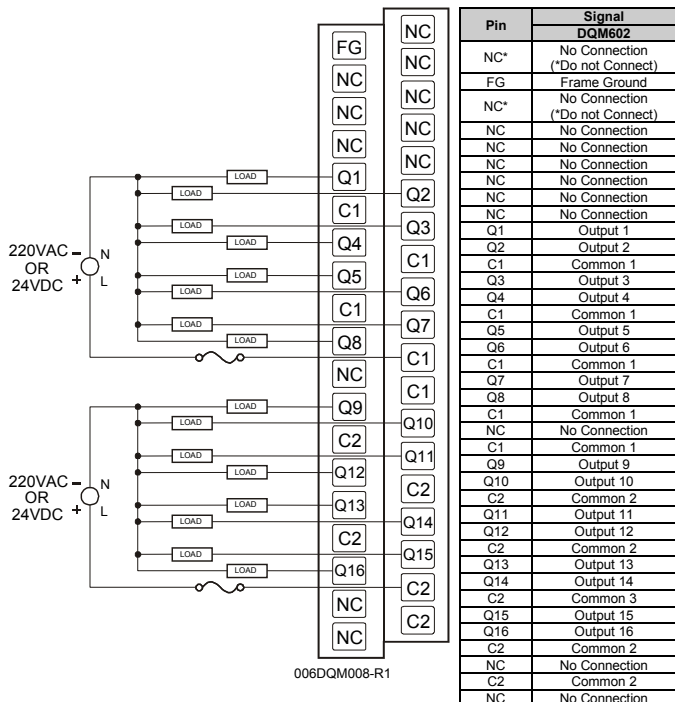
Diagnostic LED	State	Meaning
MS: (indicates fault status of Module)	Solid Red	RAM or ROM test failed
	Blinking Red	I/O test failed
	Blinking Green	Module is in power-up state
	Solid Green	Module is running normally
NS: (indicates fault status of Network)	Solid Red	Network Ack or Dup ID test failed
	Blinking Red	Network ID test failed
	Blinking Green	Module is in Life Expectancy default state
	Solid Green	Network is running normally

b. Status LED Indicators

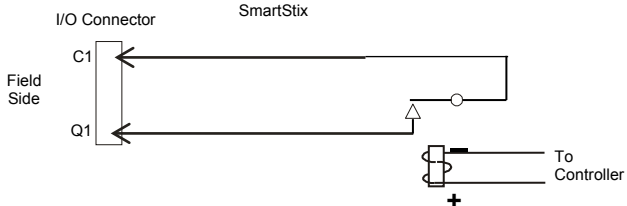
The Power Status LED illuminates Red when power is applied to the module. There are I/O Status LED indicators for each of the Digital I/O points, which illuminate Red when an I/O point is ON.

6 WIRING

DQM602 Relay Outputs			
Number of output points	16	Minimum load voltage / current	5VDC / 1mA
Commons per Module	2	Maximum Load Current (resistive)	2.0A per channel 5.0A per common
Rated Load Voltage	24VDC, 220VAC	OFF to ON Response	10ms. Max.
Rated Voltage	11 – 25 VDC	ON to OFF Response	12ms. Max.
Internal power Consumption (mA)	550mA	Output Type	N.O.
		Weight	9.91oz. (281 g)



7 INTERNAL WIRING



Specification for transient voltage suppressors (transorbs) used on output circuitry is 400VDC, bi-directional 400 watts.

Electro-mechanical relays comply with IEC1131-2.

8 DECIMAL (DEC) TO HEXADECIMAL (HEX) CONVERSION TABLE

Dec	Hex		Dec	Hex		Dec	Hex	
	HI	LO		HI	LO		HI	LO
0	0	0	86	5	6	172	A	C
1	0	1	87	5	7	173	A	D
2	0	2	88	5	8	174	A	E
3	0	3	89	5	9	175	A	F
4	0	4	90	5	A	176	B	0
5	0	5	91	5	B	177	B	1
6	0	6	92	5	C	178	B	2
7	0	7	93	5	D	179	B	3
8	0	8	94	5	E	180	B	4
9	0	9	95	5	F	181	B	5
10	0	A	96	6	0	182	B	6
11	0	B	97	6	1	183	B	7
12	0	C	98	6	2	184	B	8
13	0	D	99	6	3	185	B	9
14	0	E	100	6	4	186	B	A
15	0	F	101	6	5	187	B	B
16	1	0	102	6	6	188	B	C
17	1	1	103	6	7	189	B	D
18	1	2	104	6	8	190	B	E
19	1	3	105	6	9	191	B	F
20	1	4	106	6	A	192	C	0
21	1	5	107	6	B	193	C	1
22	1	6	108	6	C	194	C	2
23	1	7	109	6	D	195	C	3
24	1	8	110	6	E	196	C	4
25	1	9	111	6	F	197	C	5
26	1	A	112	7	0	198	C	6

27	1	B	113	7	1	199	C	7
28	1	C	114	7	2	200	C	8
29	1	D	115	7	3	201	C	9
30	1	E	116	7	4	202	C	A
31	1	F	117	7	5	203	C	B
32	2	0	118	7	6	204	C	C
33	2	1	119	7	7	205	C	D
34	2	2	120	7	8	206	C	E
35	2	3	121	7	9	207	C	F
36	2	4	122	7	A	208	D	0
37	2	5	123	7	B	209	D	1
38	2	6	124	7	C	210	D	2
39	2	7	125	7	D	211	D	3
40	2	8	126	7	E	212	D	4
41	2	9	127	7	F	213	D	5
42	2	A	128	8	0	214	D	6
43	2	B	129	8	1	215	D	7
44	2	C	130	8	2	216	D	8
45	2	D	131	8	3	217	D	9
46	2	E	132	8	4	218	D	A
47	2	F	133	8	5	219	D	B
48	3	0	134	8	6	220	D	C
49	3	1	135	8	7	221	D	D
50	3	2	136	8	8	222	D	E
51	3	3	137	8	9	223	D	F
52	3	4	138	8	A	224	E	0
53	3	5	139	8	B	225	E	1
54	3	6	140	8	C	226	E	2
55	3	7	141	8	D	227	E	3
56	3	8	142	8	E	228	E	4
57	3	9	143	8	F	229	E	5
58	3	A	144	9	0	230	E	6
59	3	B	145	9	1	231	E	7
60	3	C	146	9	2	232	E	8
61	3	D	147	9	3	233	E	9
62	3	E	148	9	4	234	E	A
63	3	F	149	9	5	235	E	B
64	4	0	150	9	6	236	E	C
65	4	1	151	9	7	237	E	D
66	4	2	152	9	8	238	E	E
67	4	3	153	9	9	239	E	F
68	4	4	154	9	A	240	F	0
69	4	5	155	9	B	241	F	1
70	4	6	156	9	C	242	F	2
71	4	7	157	9	D	243	F	3
72	4	8	158	9	E	244	F	4
73	4	9	159	9	F	245	F	5
74	4	A	160	A	0	246	F	6
75	4	B	161	A	1	247	F	7
76	4	C	162	A	2	248	F	8
77	4	D	163	A	3	249	F	9
78	4	E	164	A	4	250	F	A
79	4	F	165	A	5	251	F	B
80	5	0	166	A	6	252	F	C
81	5	1	167	A	7	253	F	D
82	5	2	168	A	8	254	F	E
83	5	3	169	A	9	255	F	F
84	5	4	170	A	A			
85	5	5	171	A	B			

9 INSTALLATION / SAFETY

- All applicable codes and standards need to be followed in the installation of this product.
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 8441 or equivalent.
- For detailed installation information, refer to Chapter Two in the Control Station Hardware Manual (MAN0227). A handy checklist is provided that covers panel box layout requirements and minimum clearances.



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

Warning: To protect the module and associated wiring from load faults, use external fuse (5 A).

Warning: Connecting high voltage to any I/O pin may cause high voltage to appear at other I/O pins.

Warning: Wiring the line side of the AC source to loads connected to outputs 0 through 15 and the neutral side of the AC source to the output common(s) would create a Negative Logic condition, which may be considered an unsafe practice.

10 TECHNICAL ASSISTANCE

For assistance and manual updates, contact Technical Support at the following locations:

North America:
 Tel: 317 916-4274
 Fax: 317 639-4279
 Web: <http://www.heapq.com>
 Email: techspt@heapq.com

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

Cscape, SmartStix and CsCAN are trademarks of Horner APG. This information is subject to change without notice.