

**PEARL-  
MM Pearl-  
MM Relay  
Output Module  
Relay Output  
PC/104  
Module**



**DIAMOND**  
S Y S T E M S

 **PC104**



**FEATURES**

- 16 SPDT (Form C) relays
- Long lifetime - 100,000,000 operations
- 500VAC/DC isolation between board and signals
- Two pin headers for I/O connections
- 40°C to +85°C operating temperature

**◆ Description**

Pearl-MM is a PC/104 format industrial control module with 16 relays. The relays have PDT (form C) configuration. Each relay has 3 contacts: Common, Normally Open, and Normally Closed. For safety and reliability, all relays are in their power-off state (Common connected to Normally Closed) at power-up or system reset. The relays can switch both AC and DC voltages. They feature long life (100,000,000 operations), quick actuation time (4ms max operate and release), and isolation (500V AC or DC).

**◆ I/O Headers**

C = Common >

NC = Normally Closed (connected to Common when relay is not energized)

NO = Normally Open (connected to Common when relay is energized)

Pearl-MM is programmed using two 8-bit I/O registers. Each bit controls one relay. Writing a 1 to a bit turns the relay on, while writing a 0 turns the relay off. On power-up or reset, all bits are 0, and all relays are off (C connected to NC).

The diagram below shows one pin header for relays 0-7. The second one uses similar pinout for relays 8-15.

0 NO	<b>1</b>	<b>2</b>	0 NO
0 C	<b>3</b>	<b>4</b>	0 C

0 NC	<b>5</b>	<b>6</b>	0 NC
1 NO	<b>7</b>	<b>8</b>	1 NO
1 C	<b>9</b>	<b>10</b>	1 C
1 NC	<b>11</b>	<b>12</b>	1 NC
2 NO	<b>13</b>	<b>14</b>	2 NO
2 C	<b>15</b>	<b>16</b>	2 C
2 NC	<b>17</b>	<b>18</b>	2 NC
3 NO	<b>19</b>	<b>20</b>	3 NO
3 C	<b>21</b>	<b>22</b>	3 C
3 NC	<b>23</b>	<b>24</b>	3 NC
4 NO	<b>25</b>	<b>26</b>	4 NO
4 C	<b>27</b>	<b>28</b>	4 C
4 NC	<b>29</b>	<b>30</b>	4 NC
5 NO	<b>31</b>	<b>32</b>	5 NO
5 C	<b>33</b>	<b>34</b>	5 C
5 NC	<b>35</b>	<b>36</b>	5 NC
6 NO	<b>37</b>	<b>38</b>	6 NO
6 C	<b>39</b>	<b>40</b>	6 C
6 NC	<b>41</b>	<b>42</b>	6 NC
7 NO	<b>43</b>	<b>44</b>	7 NO
7 C	<b>45</b>	<b>46</b>	7 C
7 NC	<b>47</b>	<b>48</b>	7 NC
NOT USED	<b>49</b>	<b>50</b>	NOT USED

## ◆ Specifications

Relays	
<b>No. of Outputs</b>	16
<b>Relay type</b>	SPDT (Form C)
<b>Max voltage/current</b>	DC: 0VDC/2A 60W (DC), 60VA (AC) AC: 125VAC/0.5A resistive
<b>Max switching capacity</b>	220VDC, 250VAC
<b>Max operating voltage</b>	10mA@10mVDC
<b>Contact resistance</b>	100mΩ max
<b>Relay lifetime</b>	100,000,000 operations
<b>Actuation time</b>	4ms max operate or release
General	
<b>I/O connections</b>	50-position (2x20) .025" square pin header on .1" centers
<b>Isolation (all I/O)</b>	500VDC or AC, channel-to-channel and channel-to-board
<b>Power supply</b>	+5VDC ±10%
<b>Operating temperature</b>	-40°C to +85°C
<b>Operating humidity</b>	5% to 95% non-condensing
<b>Weight</b>	3.4oz / 96g
<b>MTBF</b>	118,227 hours
<b>RoHS</b>	Compliant

Pearl-MM uses two 50-pin .1" pitch pin headers for all I/O. Cable C-50-18 may be used for convenient connection to these pin headers. Each board requires 1 or 2 cables for up to 8 or up to 16 relays respectively.

Cable	Description	Drawing
C-50-18	50-conductor .1" pitch 18" ribbon cable, Data acquisition Cable (uses 2)	<a href="#">Show</a>

### ◆ Ordering Information

### ◆ Models and Accessories

**Pearl-MM**

**available models:**

**PMM-P** Pearl-MM 16 SPDT Relays, Pin Headers Min Order Quantity

Please [login](#) or [signup](#) for an online quote request.

**Cables and accessories**

**available models:**

[C-50-18](#) 50-conductor .1" pitch 18" ribbon cable (uses 2)

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