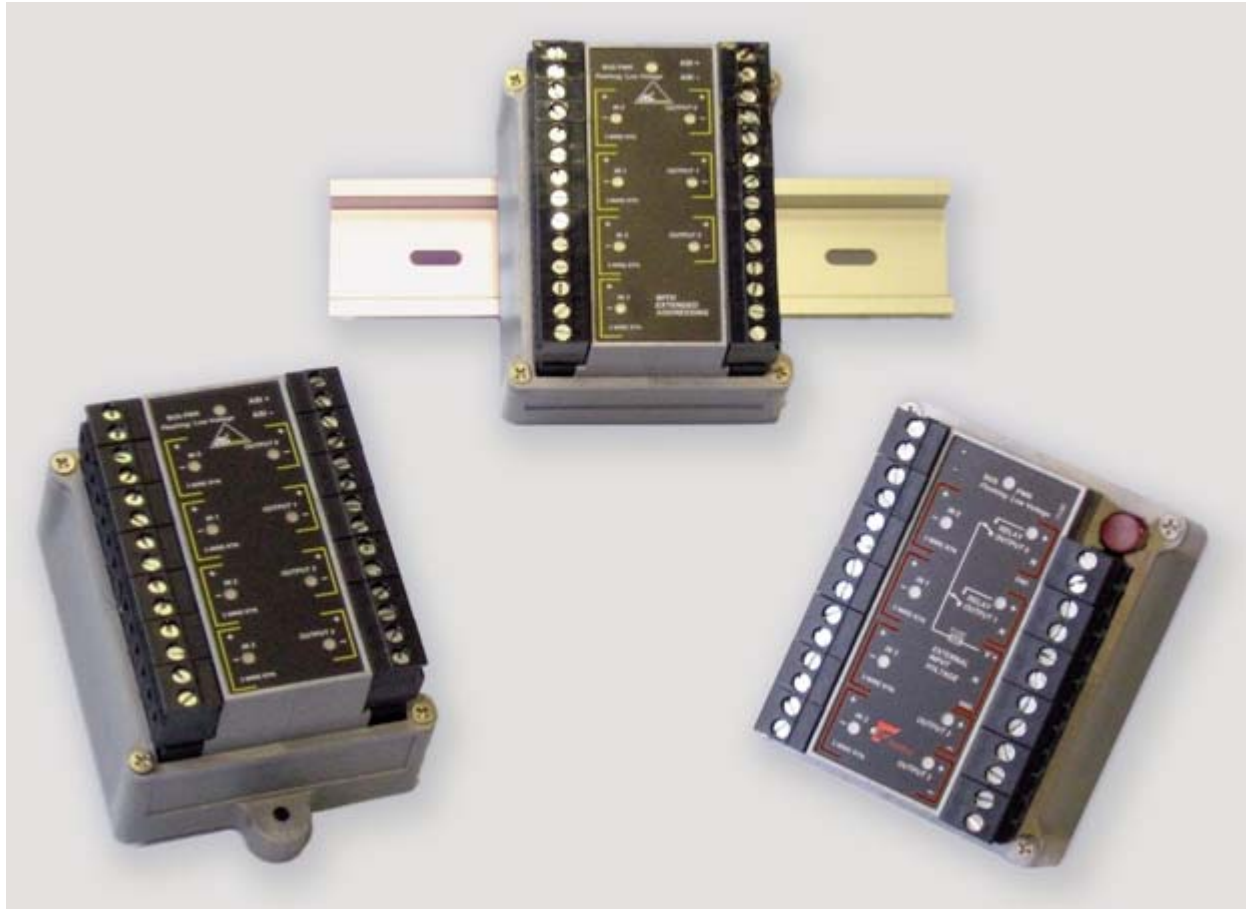




## Advanced I/O Module with AS-Interface Protocol



**StoneL®**  
Valve Communication Solutions

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Table Of Contents ..... Page 2  
IO Module Selector Guide ..... Page 3  
General Specifications and Ratings ..... Page 3  
Dimensional Data ..... Page 3  
Models IO96\_03\_\_\_ and IO97\_02\_\_\_ Specifications (Standard IO Modules) ..... Page 4  
Models IO96\_08\_\_\_ and IO97\_07\_\_\_ Specifications (Relay IO Modules - Independent Outputs) ..... Page 5  
Models IO96\_11\_\_\_ and IO97\_12\_\_\_ Specifications (Relay IO Modules - Interlocked Outputs) ..... Page 6

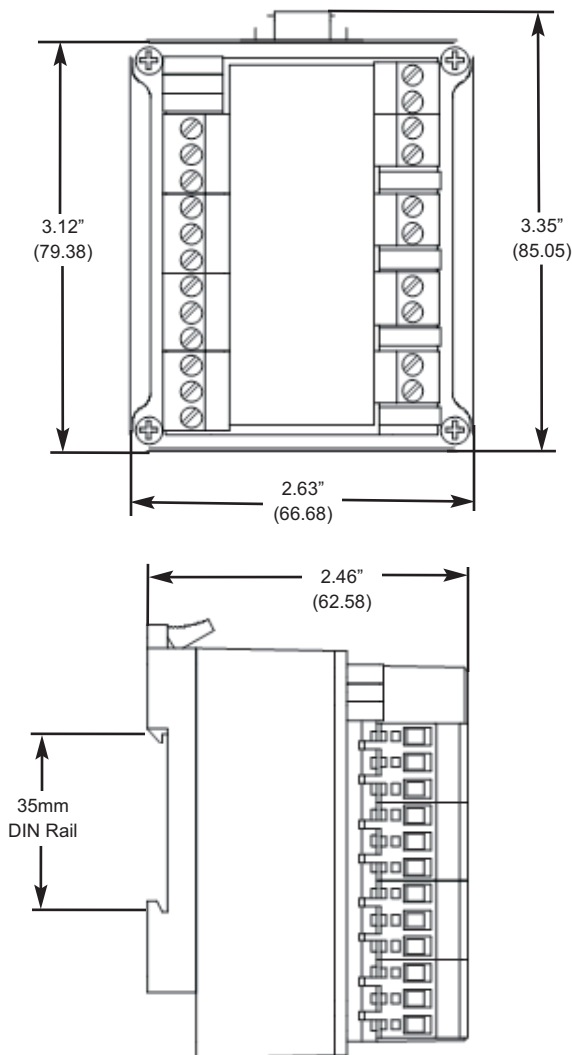
	Protocol	Mounting	Configuration	Approval	Branding
<b>IO</b>	96 - AS-Interface (Standard Addressing) 97 - AS-Interface (Extended Addressing)	W - DIN Y - STD	XX - Special 02 - 4DI 3DO 03 - 4DI 4DO 07 - 4DI 1DO 2DO (Relay) Independent 08 - 4DI 2DO 2DO (Relay) Independent 11 - 4DI 2DO 2DO (Relay) Interlocking 12 - 4DI 1DO 2DO (Relay) Interlocking	F - cFMus A - ATEX N - None	A - StoneL M - Metso N - Neles

**General Specifications and Ratings**

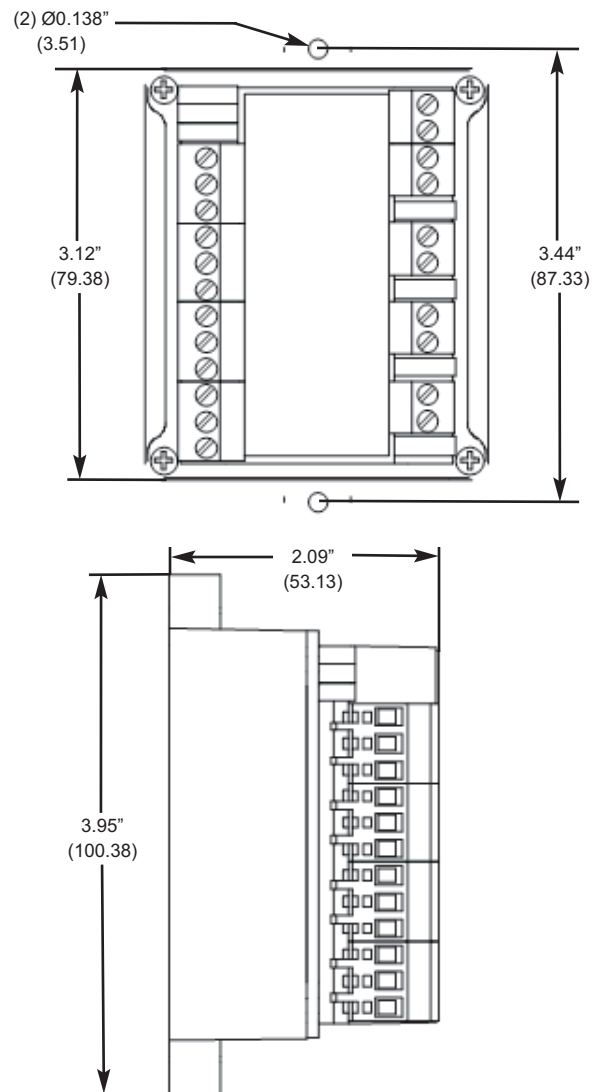
<p><b>Materials of Construction</b></p> <p>Housing: Lexan® Polycarbonate Fasteners: Stainless Steel Terminal Blocks: Accepts up to 12AWG wire (2.05mm) <b>Operating Temp Range:</b> -40° to +80° C (-40° to 176° F) <b>Storage Temp Range :</b> -40° to +80° C (-40° to 176° F)</p>	<p><b>Ingress Protection</b></p> <p>IP20</p> <p><b>Hazardous Location Ratings</b></p> <p>Non-Incendive (NI): Class I, Division 2, All Gas Groups</p> <p><b>Warranty</b></p> <p>Two Years</p>
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**Dimensional Information (mm)**

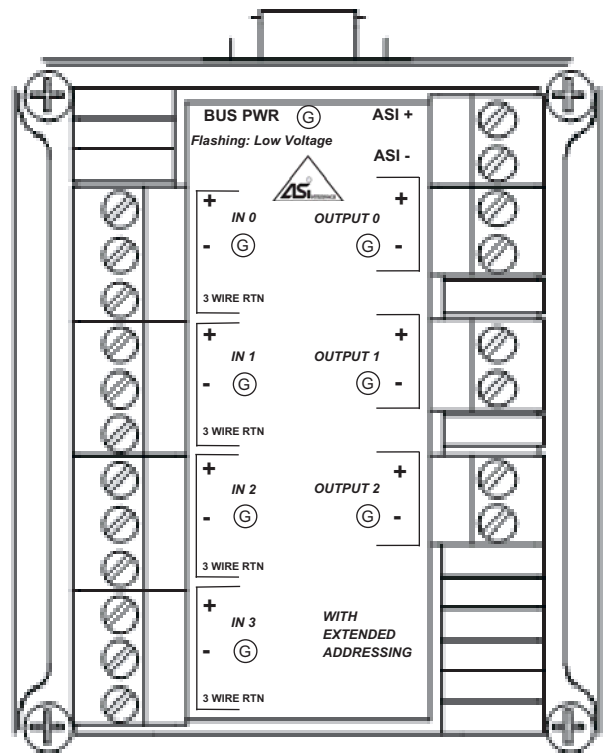
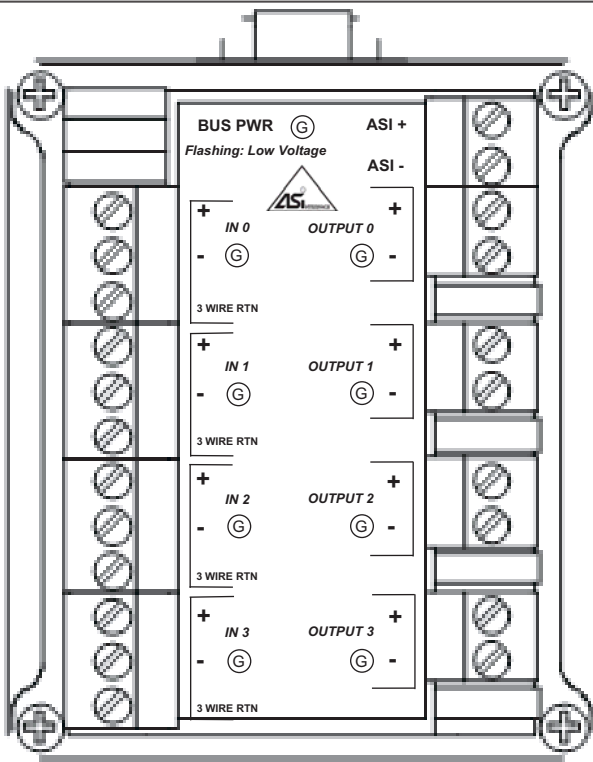
**DIN Rail Version**



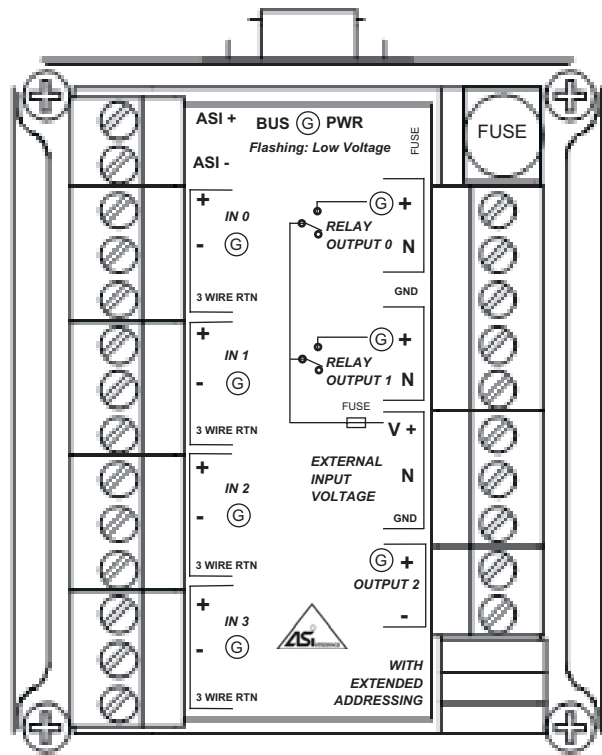
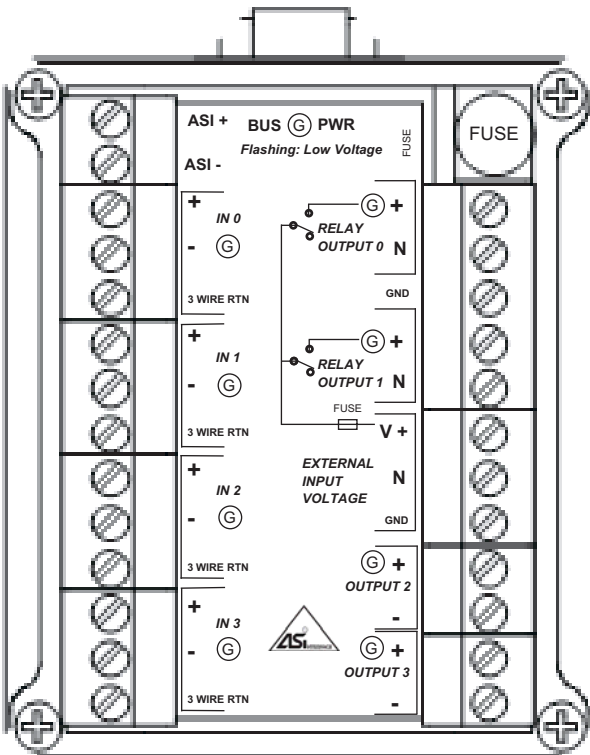
**Flat Mount Version**



MODEL# IO96_03__	MODEL# IO97_02__																				
<p><b>AS-Interface Type</b> v3.0 (Standard Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (4) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (4):</b></p> <p>(Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>AS-Interface Profile</b> ID Code = F; I/O Code = 7 (4 DI/4 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Output 3</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Output 0	DI1 = Input 1	DO1 = Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Output 3	<p><b>AS-Interface Type</b> v3.0 (Extended Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (3) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (3):</b></p> <p>(Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>AS-Interface Profile</b> ID Code = A; I/O Code = 7 (4 DI/3 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Not Used</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Output 0	DI1 = Input 1	DO1 = Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Not Used
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MODEL# IO96_08__	MODEL# IO97_07__																				
<p><b>AS-Interface Type</b> v3.0 (Standard Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Relay Outputs 21mA (per relay coil)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (4) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (2):</b> (Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>Relay Outputs (2):</b> 120/250VAC/30VDC fused @ 2 Amps</p> <p>External Voltage Up to 250 VAC; 30 VDC (For Relay Outputs)</p> <p>Fuse StoneL Part# ST434162</p> <p><b>AS-Interface Profile</b> ID Code = F; I/O Code = 7 (4 DI/4 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Relay Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Relay Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Output 3</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Relay Output 0	DI1 = Input 1	DO1 = Relay Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Output 3	<p><b>AS-Interface Type</b> v3.0 (Extended Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Relay Outputs 21mA (per relay coil)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (3) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (1):</b> (Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>Relay Outputs (2):</b> 120/250VAC/30VDC fused @ 2 Amps</p> <p>External Voltage Up to 250 VAC; 30 VDC (For Relay Outputs)</p> <p>Fuse StoneL Part# ST434162</p> <p><b>AS-Interface Profile</b> ID Code = A; I/O Code = 7 (4 DI/3 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Relay Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Relay Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Not Used</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Relay Output 0	DI1 = Input 1	DO1 = Relay Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Not Used
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MODEL# IO96_11__	MODEL# IO97_12__																				
<p><b>AS-Interface Type</b> v3.0 (Standard Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Relay Outputs 21mA (per relay coil)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (4) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (2):</b></p> <p>(Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>Relay Outputs (2):</b> 120/250VAC/30VDC fused @ 2 Amps</p> <p>External Voltage Up to 250 VAC; 30 VDC</p> <p>(For Relay Outputs)</p> <p>Fuse StoneL Part# ST434162</p> <p><b>AS-Interface Profile</b> ID Code = F; I/O Code = 7 (4 DI/4 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Relay Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Relay Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Output 3</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Relay Output 0	DI1 = Input 1	DO1 = Relay Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Output 3	<p><b>AS-Interface Type</b> v3.0 (Extended Addressing)</p> <p><b>Operating Voltage</b> AS-Interface voltage</p> <p><b>Current Usage:</b></p> <p>No I/O enabled 16mA</p> <p>Discrete Inputs 3mA (each)</p> <p>Discrete Outputs 167mA (4 Watts total power available)</p> <p>Relay Outputs 21mA (per relay coil)</p> <p>Over Current State 220mA</p> <p><b>LED Indication:</b></p> <p>Bus Power (1) Green (Steady = OK; Flashing = Voltage &lt;26vdc)</p> <p>Discrete Input State (4) Green (Lit = Switch Made)</p> <p>Discrete Output State (3) Green (Lit = Output On)</p> <p><b>Discrete Inputs (4):</b> Use with gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors</p> <p>Voltage 28VDC</p> <p>Max Current Available 2.5mA (per Discrete Input)</p> <p>Max Leakage</p> <p>Current Tolerance &lt;0.30mA</p> <p><b>Discrete Outputs (1):</b></p> <p>(Bus Powered) 24VDC (4 Watts total power available)</p> <p><b>Relay Outputs (2):</b> 120/250VAC/30VDC fused @ 2 Amps</p> <p>External Voltage Up to 250 VAC; 30 VDC</p> <p>(For Relay Outputs)</p> <p>Fuse StoneL Part# ST434162</p> <p><b>AS-Interface Profile</b> ID Code = A; I/O Code = 7 (4 DI/4 DO)</p> <p><b>Default Address</b> 00</p> <p><b>Bit Assignment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><u>Input Data</u></td> <td style="border: none;"><u>Output Data</u></td> </tr> <tr> <td style="border: none;">DI0 = Input 0</td> <td style="border: none;">DO0 = Relay Output 0</td> </tr> <tr> <td style="border: none;">DI1 = Input 1</td> <td style="border: none;">DO1 = Relay Output 1</td> </tr> <tr> <td style="border: none;">DI2 = Input 2</td> <td style="border: none;">DO2 = Output 2</td> </tr> <tr> <td style="border: none;">DI3 = Input 3</td> <td style="border: none;">DO3 = Not Used</td> </tr> </table> <p><b>Peripheral Fault Bit</b> Set = Unit current draw exceeding 220mA</p>	<u>Input Data</u>	<u>Output Data</u>	DI0 = Input 0	DO0 = Relay Output 0	DI1 = Input 1	DO1 = Relay Output 1	DI2 = Input 2	DO2 = Output 2	DI3 = Input 3	DO3 = Not Used
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