



### Discrete I/O Modules (Output)

RSTi discrete output modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (12 VAC, 125 VAC). The modules are available in 4, 8 or 16 point density to optimize panel space. Relay output modules are also available. The ST-2792 has an added feature of manual/automatic override.

|  | ST-2742  | ST-2744  | ST-2748  | ST-2852   |
|--|--|--|--|---|
| <b>Product Name</b>                            | 2 points, Relay Output, 2 Amps   | 4 points, Relay Output, 2 Amps   | 8 points, Relay Output, 2 Amps   | 2 points, 12 to 125 VAC Output, 0.5 Amps                  |
| <b>Lifecycle Status</b>                        | Active   | Active   | Active   | Active  |
| <b>Module Type</b>                             | Digital Outputs  | Digital Outputs  | Digital Outputs  | Digital Outputs   |
| <b>Output Range</b>                            | 5~28.8 VDC @ 2.0A Resistive<br>48 VDC @ 0.8A Resistive<br>110 VDC @ 0.5A Resistive<br>250 VAC @ 2.0A Resistive | 5~28.8 VDC @ 2.0A Resistive<br>48 VDC @ 0.8A Resistive<br>110 VDC @ 0.5A Resistive<br>250 VAC @ 2.0A Resistive | 5~28.8 VDC @ 2.0A Resistive<br>48 VDC @ 0.8A Resistive<br>110 VDC @ 0.5A Resistive<br>250 VAC @ 2.0A Resistive | 15~132 VAC 47 to 63Hz                                     |
| <b>Number of Points</b>                        | 2  | 4  | 8  | 2   |
| <b>Points per Common</b>                       | 1  | 4  | 8  | 2   |
| <b>Diagnostic Supported</b>                    |  |  |  |   |
| <b>Protection</b>                              |  |  |  |   |
| <b>ON Voltage/OFF Voltage</b>                  |  |  |  |   |
| <b>Load Current per Point</b>                  | 2A @ 5~28.8 VDC<br>0.8A @ 48 VDC<br>0.5A @ 110 VDC<br>2A @ 250 VAC   | 2A @ 5~28.8 VDC<br>0.8A @ 48 VDC<br>0.5A @ 110 VDC<br>2A @ 250 VAC   | 2A @ 5~28.8 VDC<br>0.8A @ 48 VDC<br>0.5A @ 110 VDC<br>2A @ 250 VAC   | 0.5 Amp   |
| <b>Output Inrush Current</b>                   |  |  |  | 40 Amp for 16 mSec. or<br>4 Amp for 30 Sec.               |
| <b>Response Time (ms)</b>                      | OFF to ON : Max. 10ms<br>ON to OFF: Max. 10ms  | OFF to ON: Max. 10ms<br>ON to OFF: Max. 10ms   | OFF to ON: Max. 10ms<br>ON to OFF: Max. 10ms   | OFF to ON: Max. 3ms<br>ON to OFF: Max. 1/2 Cycle plus 3ms |
| <b>Polarity</b>                                |  |  |  |   |
| <b>Field Power Requirement</b>                 | 24 VDC, 240 VAC  | No Connection with Field Power<br>Field Power passes though to<br>the next module                              | No Connection with Field Power<br>Field Power passes though to<br>the next module                              | 120 VAC nominal Voltage Range:<br>12~125 VAC              |
| <b>Power Dissipation</b>                       |  |  |  |   |
| <b>Connector Type</b>                          | Spring Clamp<br>Terminal Block   | Spring Clamp<br>Terminal Block   | Spring Clamp<br>Terminal Block   | Spring Clamp<br>Terminal Block                            |
| <b>Internal Power Used<br/>(5 VDC loading)</b> | 65 mA @ 5.0 VDC<br>Maximum   | 130 mA @ 5.0 VDC<br>Maximum  | 150 mA @ 5.0 VDC<br>Maximum  | 35 mA @ 5.0 VDC<br>Maximum                                |
| <b>Dimensions (H x W x D) in mm</b>            | 99 x 12 x 70   | 99 x 12 x 70   | 99 x 24 x 70   | 99 x 12 x 70  |



### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

|  | ST-4112  | ST-4114   | ST-4212  | ST-4214  |
|--|--|---|--|--|
| Product Name                           | 2 channels Current Output,<br>0 to 20 mA, 12bit            | 4 channels Current Output,<br>0 to 20 mA, 12bit   | 2 channels Current Output,<br>4 to 20 mA, 12bit            | 4 channels Current Output,<br>4 to 20 mA, 12bit            |
| Lifecycle Status                       | Active   | Active  | Active   | Active   |
| Module Type                            | Analog Output  | Analog Output   | Analog Output  | Analog Output  |
| Output Range                           | 0 to 20 mA   | 0 to 20 mA  | 4 to 20 mA   | 4 to 20 mA   |
| Number of Points                       | 2  | 4   | 2  | 4  |
| Points per Common                      | 2  | 4   | 2  | 4  |
| Resolution                             | 12 bits : 4.88uA/Bit                                       | 12 bits : 4.88uA/Bit  | 12 bits : 3.9uA/Bit  | 12 bits : 3.9uA/Bit  |
| Accuracy                               | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C | ±0.1% Full Scale @ 25°C<br>(100uA~20 mA) ±0.25%<br>Full Scale @ 25°C(0uA~100uA)<br>±0.3% Full Scale @ 0°C, 60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C |
| Update Rate                            | 2msec for all channels                                     | 4msec for all channels  | 2msec for all channels                                     | 4msec for all channels                                     |
| Maximum Output Load                    | Max. 500 Ω   | Max. 500 Ω  | Max. 500 Ω   | Max. 500 Ω   |
| Connector Type                         | Spring Clamp<br>Terminal Block                             | Spring Clamp<br>Terminal Block  | Spring Clamp<br>Terminal Block                             | Spring Clamp<br>Terminal Block                             |
| Internal Power Used<br>(5 VDC loading) | 60 mA @ 5.0 VDC<br>Maximum                                 | 60 mA @ 5.0 VDC<br>Maximum  | 60 mA @ 5.0 VDC<br>Maximum                                 | 60 mA @ 5.0 VDC<br>Maximum                                 |
| Dimensions (H x W x D) in mm           | 99 x 12 x 70   | 99 x 12 x 70  | 99 x 12 x 70   | 99 x 12 x 70   |



### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

|  | ST-4274  | ST-4422  | ST-4424  | ST-4474  |
|--|--|--|--|--|
| Product Name                           | 4 channels Current Output,<br>4 to 20 mA, 12bit<br>(Connector Style)               | 2 channels Voltage Output,<br>0 to 10 VDC, 12bit           | 4 channels Voltage Output,<br>0 to 10 VDC, 12bit           | 4 channels Current Output,<br>0 to 10 VDC, 12bit<br>(Connector Style)              |
| Lifecycle Status                       | Active   | Active   | Active   | Active   |
| Module Type                            | Analog Output  | Analog Output  | Analog Output  | Analog Output  |
| Output Range                           | 4 to 20 mA   | 0 to 10 VDC  | 0 to 10 VDC  | 0 to 10 VDC  |
| Number of Points                       | 4  | 2  | 4  | 4  |
| Points per Common                      | 4  | 2  | 4  | 4  |
| Resolution                             | 12 bits : 3.91uA/Bit   | 12 bits : 2.44mV/Bit                                       | 12 bits : 2.44mV/Bit                                       | 12 bits : 2.44mV/Bit   |
| Accuracy                               | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C                         | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C                         |
| Update Rate                            | 1.2msec for all channels   | 2msec for all channels                                     | 4msec for all channels                                     | 1.2msec for all channels   |
| Maximum Output Load                    | Max. 500 Ω   | Min. 5 kΩ  | Min. 2 kΩ  | Min. 2 kΩ  |
| Connector Type                         | Requires Sensor Connect 3M<br>Mini-Clamp Plug, 37104 Series<br>AWG#20~22 available | Spring Clamp<br>Terminal Block                             | Spring Clamp<br>Terminal Block                             | Requires Sensor Connect 3M<br>Mini-Clamp Plug, 37104 Series<br>AWG#20~22 available |
| Internal Power Used<br>(5 VDC loading) | 40 mA @ 5.0 VDC<br>Maximum   | 155 mA @ 5.0 VDC<br>Maximum                                | 60 mA @ 5.0 VDC<br>Maximum                                 | 60 mA @ 5.0 VDC<br>Maximum   |
| Dimensions (H x W x D) in mm           | 99 x 12 x 70   | 99 x 12 x 70   | 99 x 12 x 70   | 99 x 12 x 70   |



### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

|                                     | ST-4491   | ST-4522   | ST-4622   | ST-4911   |
|-------------------------------------|---|---|---|---|
| Product Name                        | 1 channels Voltage Output, 0 to 10 VDC, 12bit. (Manual Override or Automatic Operation) | 2 channels Voltage Output, -10 to +10 VDC, 12bit        | 2 channels Voltage Output, 0 to 5 VDC, 12bit            | 1 channels Voltage Output, 0 to 1 Amp, 12bit.           |
| Lifecycle Status                    | Active  | Active  | Active  | Active  |
| Module Type                         | Analog Output   | Analog Output   | Analog Output   | Analog Output   |
| Output Range                        | 0 to 10 VDC   | -10 to +10 VDC  | 0 to 5 VDC  | 0 to 1 Amp  |
| Number of Points                    | 1   | 2   | 2   | 1   |
| Points per Common                   | 1   | 2   | 2   | 1   |
| Resolution                          | 12 bits : 2.44mV/Bit  | 12 bits : 4.88mV/Bit                                    | 12 bits : 1.22mV/Bit                                    | 12 bits : 2.44 mA/Bit                                   |
| Accuracy                            | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C, 60°C                                 | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C, 60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C, 60°C | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C, 60°C |
| Update Rate                         | 1.2msec for all channels  | 2msec for all channels                                  | 2msec for all channels                                  | 1msec for all channels                                  |
| Maximum Output Load                 | Min. 2 kΩ   | Min. 5 kΩ   | Min. 5 kΩ   | 13 Ω, ±5%   |
| Connector Type                      | Spring Clamp<br>Terminal Block  | Spring Clamp<br>Terminal Block                          | Spring Clamp<br>Terminal Block                          | Spring Clamp<br>Terminal Block                          |
| Internal Power Used (5 VDC loading) | 60 mA @ 5.0 VDC<br>Maximum  | 155 mA @ 5.0 VDC<br>Maximum                             | 155 mA @ 5.0 VDC<br>Maximum                             | 60 mA @ 5.0 VDC<br>Maximum                              |
| Dimensions (H x W x D) in mm        | 99 x 12 x 70  | 99 x 12 x 70  | 99 x 12 x 70  | 99 x 12 x 70  |



## RTD Modules

RSTi RTD input modules 2 and 3 wire sensors. The modules also support diagnostics.

### RTD Input Types

- PT100, PT200, PT500, PT1000, PT50
- JPT100, JPT200, JPT500, JPT1000, JPT50
- NI100, NI200, NI500, NI000
- NI120, NI1000LG
- CU10

### Resistance Input

- 100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit, 50 mΩ/bit

|  | ST-3702  | ST-3704   | ST-3708  |
|--|--|---|--|
| <b>Product Name</b>                        | 2 Channels, RTD Input<br>(2 and 3 Wire)  | 4 Channels, RTD Input<br>(3 Wire) Connector Style   | 8 Channels, RTD Input<br>(3 Wire) Connector Style  |
| <b>Lifecycle Status</b>                    | Active   | Active  | Active   |
| <b>Module Type</b>                         | Temperature Sensing  | Temperature Sensing   | Temperature Sensing  |
| <b>Range</b>                               | PT50, PT100, PT200, PT500, PT1000,<br>JPT100, JPT200, JPT500, JPT1000, NI100,<br>NI200, NI500, NI1000, NI120, CU10,<br>Resistance 100 mΩ/Bit,<br>Resistance 10 mΩ/Bit,<br>Resistance 20 mΩ/Bit | PT100, PT200, PT500, PT1000, PT50<br>JPT100, JPT200, JPT500,<br>JPT1000, JPT50<br>NI100, NI200, NI500, NI000<br>NI120, NI1000LG<br>Resistance Input<br>100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit,<br>50 mΩ/bit | PT100, PT200, PT500, PT1000, PT50<br>JPT100, JPT200, JPT500,<br>JPT1000, JPT50<br>NI100, NI200, NI500, NI1000<br>NI120, NI1000LG<br>Resistance Input<br>100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit,<br>50 mΩ/bit |
| <b>Number of Points</b>                    | 2  | 4   | 8  |
| <b>Points per Common</b>                   | 2  | 4   | 8  |
| <b>Diagnostic Supported</b>                | Open Channel   | Open Channel<br>Over Range  | Open Channel<br>Over Range   |
| <b>Resolution</b>                          | 0.1°C / 10 mΩ  | ±0.1°C/ F, 10 mΩ  | ±0.1°C/ F, 10 mΩ   |
| <b>Accuracy</b>                            | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C   | ±0.3% Full Scale @ 25°C<br>±0.5% Full Scale @ 0°C,<br>60°C  | ±0.3% Full Scale @ 25°C<br>±0.5% Full Scale @ 0°C,<br>60°C   |
| <b>Update Rate</b>                         | 200msec for all channels   | 30msec per channel  | 30msec per channel   |
| <b>Internal Power Used (5 VDC loading)</b> | 70 mA @ 5.0 VDC Maximum  | 100 mA @ 5.0 VDC Maximum  | 100 mA @ 5.0 VDC Maximum   |
| <b>Connector Type</b>                      | Spring Clamp<br>Terminal Block   | Requires connector type Hirose,<br>HIF3BA-20D-2.54C   | Requires connector type Hirose,<br>HIF3BA-20D-2.54C  |
| <b>Dimensions (H x W x D) in mm</b>        | 99 x 12 x 70   | 99 x 12 x 70  | 99 x 12 x 70   |



## Thermocouple Modules

RSTi Thermocouple/mV input modules support a wide range of thermocouple sensors. The modules also support diagnostics and Cold Junction Compensation.

Thermocouple Inputs

- Type K/J/T/B/R/S/E/N/L/U/C/D

mV Input

- 10uV/bit, 1uV/bit, 2uV/bit

|  | ST-3802  | ST-3804  | ST-3808  |
|--|--|--|--|
| <b>Product Name</b>                        | 2 Channels, Thermocouple Input/mV                                      | 4 Channels, Thermocouple Input/mV (External CJC support)               | 8 Channels, Thermocouple Input/mV (External CJC support)               |
| <b>Lifecycle Status</b>                    | Active   | Active   | Active   |
| <b>Module Type</b>                         | Temperature Sensing  | Temperature Sensing  | Temperature Sensing  |
| <b>Range</b>                               | Type K/J/T/B/R/S/E/N/L/U/C/D<br>mV Input<br>10uV/Bit, 1uV/Bit, 2uV/Bit | Type K/J/T/B/R/S/E/N/L/U/C/D<br>mV Input<br>10uV/bit, 1uV/bit, 2uV/bit | Type K/J/T/B/R/S/E/N/L/U/C/D<br>mV Input<br>10uV/bit, 1uV/bit, 2uV/bit |
| <b>Number of Points</b>                    | 2  | 4  | 8  |
| <b>Points per Common</b>                   | 2  | 4  | 8  |
| <b>Diagnostic Supported</b>                | Open Channel   | Open Channel<br>Over Range   | Open Channel<br>Over Range   |
| <b>Resolution</b>                          | 0.1°C / 10mΩ   | 0.1°C / °F, 10uV   | ±0.1°C / F, 1uV  |
| <b>Accuracy</b>                            | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C             | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C             | ±0.1% Full Scale @ 25°C<br>±0.3% Full Scale @ 0°C,<br>60°C             |
| <b>Update Rate</b>                         | 200msec for all channels   | 30msec per channel   | 30msec per channel   |
| <b>Internal Power Used (5 VDC loading)</b> | 70 mA @ 5.0 VDC Maximum  | 120 mA @ 5.0 VDC Maximum   | 140 mA @ 5.0 VDC Maximum   |
| <b>Connector Type</b>                      | Spring Clamp<br>Terminal Block   | Requires connector type Hirose,<br>HIF3BA-20D-2.54C                    | Requires connector type Hirose,<br>HIF3BA-20D-2.54C                    |
| <b>Dimensions (H x W x D) in mm</b>        | 99 x 12 x 70   | 99 x 12 x 70   | 99 x 12 x 70   |



### Serial Communications Modules

RSTi serial communications modules enable serial devices, such as bar code readers, scales and printers, to connect to the network interface.

|  | ST-5211  | ST-5212  | ST-5221  |
|--|--|--|--|
| <b>Product Name</b>                        | 1 Channel Serial RS-232  | 2 Channel Serial RS-232  | 1 Channel Serial RS-422  |
| <b>Lifecycle Status</b>                    | Active   | Active   | Active   |
| <b>Module Type</b>                         | Serial Communications  | Serial Communications  | Serial Communications  |
| <b>Protocol Supported</b>                  | ASCII, TxD, RxD, Full Duplex                                       | ASCII, TxD, RxD, Full Duplex   | ASCII, TxD, RxD, Full Duplex                                       |
| <b>Interface Connector Type</b>            | Spring Clamp Terminal Block  | Spring Clamp Terminal Block  | Spring Clamp Terminal Block  |
| <b>Baud Rate</b>                           | 300 to 115,200 bps   | 300 to 115,200 bps   | 300 to 115,200 bps   |
| <b>I/O Data Size</b>                       | 6 Bytes In/6 Bytes Out<br>Buffer: RxD 1024 Bytes;<br>TxD 256 Bytes | 12 Bytes In/12 Bytes Out<br>Buffer: RxD 1024 Bytes;<br>TxD 256 Bytes | 6 Bytes In/6 Bytes Out<br>Buffer: RxD 1024 Bytes;<br>TxD 256 Bytes |
| <b>Internal Power Used (5 VDC loading)</b> | 95 mA @ 5.0 VDC Maximum  | 110 mA @ 5.0 VDC Maximum   | 155 mA @ 5.0 VDC Maximum   |
| <b>Dimensions (H x W x D) in mm</b>        | 99 x 12 x 70   | 99 x 12 x 70   | 99 x 12 x 70   |



### Serial Communications Modules

RSTi serial communications modules enable serial devices, such as bar code readers, scales and printers, to connect to the network interface.

|  | ST-5231  | ST-5232  |
|--|--|--|
| <b>Product Name</b>                        | 1 Channel Serial RS-485  | 2 Channel Serial RS-485  |
| <b>Lifecycle Status</b>                    | Active   | Active   |
| <b>Module Type</b>                         | Serial Communications  | Serial Communications  |
| <b>Protocol Supported</b>                  | ASCII, TxD, RxD, Full Duplex                                       | ASCII, TxD, RxD, Full Duplex   |
| <b>Interface Connector Type</b>            | Spring Clamp Terminal Block  | Spring Clamp Terminal Block  |
| <b>Baud Rate</b>                           | 300 to 115,200 bps   | 300 to 115,200 bps   |
| <b>I/O Data Size</b>                       | 6 Bytes In/6 Bytes Out<br>Buffer: RxD 1024 Bytes;<br>TxD 256 Bytes | 12 Bytes In/12 Bytes Out<br>Buffer: RxD 1024 Bytes;<br>TxD 256 Bytes |
| <b>Internal Power Used (5 VDC loading)</b> | 110 mA @ 5.0 VDC Maximum   | 155 mA @ 5.0 VDC Maximum   |
| <b>Dimensions (H x W x D) in mm</b>        | 99 x 12 x 70   | 99 x 12 x 70   |