

# PRODUCT MANUAL

## LYNX™ SHIELDED DUAL-RELAY OUTPUT MODULE

### OR2-M





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### OR2-M

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### OR2-M

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# PRODUCT MANUAL

## LYNX™ SHIELDED DUAL-RELAY OUTPUT MODULE

### OR2-M

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## INTRODUCTION

Read, understand, and comply with all following instructions. This guide must be kept available for reference at all times.

### DISCLAIMER




Inasmuch as RJG, Inc. has no control over the use to which others may put this material, it does not guarantee that the same results as those described herein will be obtained. Nor does RJG, Inc. guarantee the effectiveness or safety of any possible or suggested design for articles of manufacture as illustrated herein by any photographs, technical drawings, and the like. Each user of the material or design or both should make his own tests to determine the suitability of the material or any material for the design as well as the suitability of the material, process, and/or design for his own particular use. Statements concerning possible or suggested uses of the material or designs described herein are not to be construed as constituting a license under any RJG, Inc. patent covering such use or as recommendations for use of such material or designs in the infringement of any patent.

### PRIVACY

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### ALERTS

The following three alert types are used as needed to further clarify or highlight information presented in the manual:

-  **DEFINITION** *A definition or clarification of a term or terms used in the text.*
-  **NOTES** *A note provides additional information about a discussion topic.*
-  **CAUTION** *A caution is used to make the operator aware of conditions that can cause damage to equipment and/or injury to personnel.*





## PRODUCT DESCRIPTION

The Lynx shielded dual-output relay module is a DIN-rail-mounted module that is wired to the molding machine in order to provide output signals from the eDART® or CoPilot® systems for part sorting, injection enable, or transfer (V→P).

## APPLICATIONS

### PROCESS MONITORING AND CONTROL

The eDART and CoPilot systems require various inputs from the injection molding machine in order to accurately calculate significant process values for monitoring and control.

The OR2-M supplies two contact relays from the eDART or CoPilot system to the molding machine, or robot, to output to sorting, control, production, indicator, sequence module, machine sequence, or valve gate (requires eDART or CoPilot system valve gate software).



## OPERATION

### PART SORTING OUTPUTS

The OR2-M is often used to provide a signal to sorting equipment to perform sorting actions. The shielded dual-relay input module cable C-OR2-M-3M is wired to the sorting equipment input card which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART or CoPilot system.

In the eDART or CoPilot software, the module is configured to properly identify and sort parts; the module may also be configured to stop the machine after a specified number of reject parts are created in a specified number of consecutive cycles.

#### 1. Good Control

Good control sends a signal to a robot that the last part made is “good” for sorting purposes.

#### 2. Sample Parts Control

Sample parts control turns on a “sample parts” control—could be used to tell a robot to divert parts to a special sample location.

#### 3. Excessive Rejects Control

Excessive rejects control turns on “excessive rejects” control based on a user-defined number of rejects within a user-defined number of consecutive cycles; the output signal could turn on some form of an alerting mechanism or it could shut the machine down entirely.

#### 4. Bad/Reject Control

Bad, or reject, control sends a signal to a robot that the last part made was “bad” for sorting purposes.

### CONTROL OUTPUTS

#### 1. Injection Enable

The OR2-M is often used to provide a signal to the injection molding machine to indicate the machine that injection is enabled. The shielded dual-relay input module cable C-OR2-M-3M is wired to the machine input card which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART. In the eDART or CoPilot system software, the module is configured to properly detect and enable injection.

#### 2. Machine Transfer

The OR2-M is often used to provide a signal to the injection molding machine to indicate the machine to transfer from pressure to hold (V→P). The shielded dual-relay output module cable C-OR2-M-3M is wired to the machine input card which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART. In the eDART or CoPilot software, the module is configured to properly detect and enable V→P.

#### 3. Job Start

The OR2-M can be used in conjunction with the eDART Job Started tool to allow a machine to run only after the eDART job is running. The shielded dual-relay output module cable C-OR2-M-3M is wired to the machine input card, which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART when the specified job is running.

## OPERATION *(continued)*

### PRODUCTION OUTPUTS

The OR2-M can be used to provide a signal to a light indicator tree that displays the status of a running molding machine from the eDART software to indicate the status of a process. The shielded dual-relay input module cable C-OR2-M-3M is wired to the light indicator tree which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART.

#### 1. Job Down

The job down production output sends a signal to a light indicator for display.

#### 2. Job Running

The job running production output sends a signal to a light indicator for display.

#### 3. Job Started

The job started production output sends a signal to a light indicator for display.

### INDICATOR OUTPUTS

The OR2-M can be used to provide a signal to a light indicator tree that displays the status of a running molding machine from the eDART software to indicate if a process is running within its preset limits. The shielded dual-relay input module cable C-OR2-M-3M is wired to the light indicator tree which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART.

#### 1. Process Good

The process good indicator output sends a signal to a light indicator for display.

#### 2. Process Alarm

The process alarm indicator output sends a signal to a light indicator for display.

#### 3. Process Warning

The process warning indicator output sends a signal to a light indicator for display.

### SEQUENCE MODULE OUTPUTS

The OR2-D can be used to provide a signal to a robot, PLC, etc. that indicates the current status of the molding machine cycle's sequence, including the statuses listed below:

- Injection Forward
- Screw Run
- Mold Opening
- Mold Closing
- Machine in Manual
- Pump On
- Mold Clamped
- Mold Fully open
- First Stage
- Second Stage
- Fill
- Shuttle Position
- Core Pull
- Pin Pull
- Ejection
- Unknown
- Auxiliary

## OPERATION *(continued)*

### MACHINE SEQUENCE OUTPUTS

The eDART and CoPilot system software calculations of times and process variables are based on internal machine sequences; these are calculated by the eDART or CoPilot software using the actual machine sequence module inputs. Each of the following machine sequences represents a status or function of the machine and can be sent from the OR2-M module as an output signal:

- Injection Forward
- Fill
- Pack
- Hold
- Plastic Cooling
- Screw Run
- Mold Opening
- Mold Closing
- Mold Clamped
- Mold fully open
- Auxiliary

### VALVE GATE OUTPUTS

The OR2-M is often used to provide a signal to a valve gate to open or close the gate. The shielded dual-relay output module cable C-OR2-M-3M is wired to the valve gate solenoid which accepts the signal; the C-OR2-M-3M is connected to the OR2-M, which collects the signal for use from the eDART or CoPilot system. In the eDART or CoPilot system valve gate software, the module is configured to open, close, or enable the gate; refer to the eDART Valve Gate Software manual or the CoPilot Software User Guide for all instructions.

#### 1. Open Gate

The valve gate output sends a signal to open a gate.

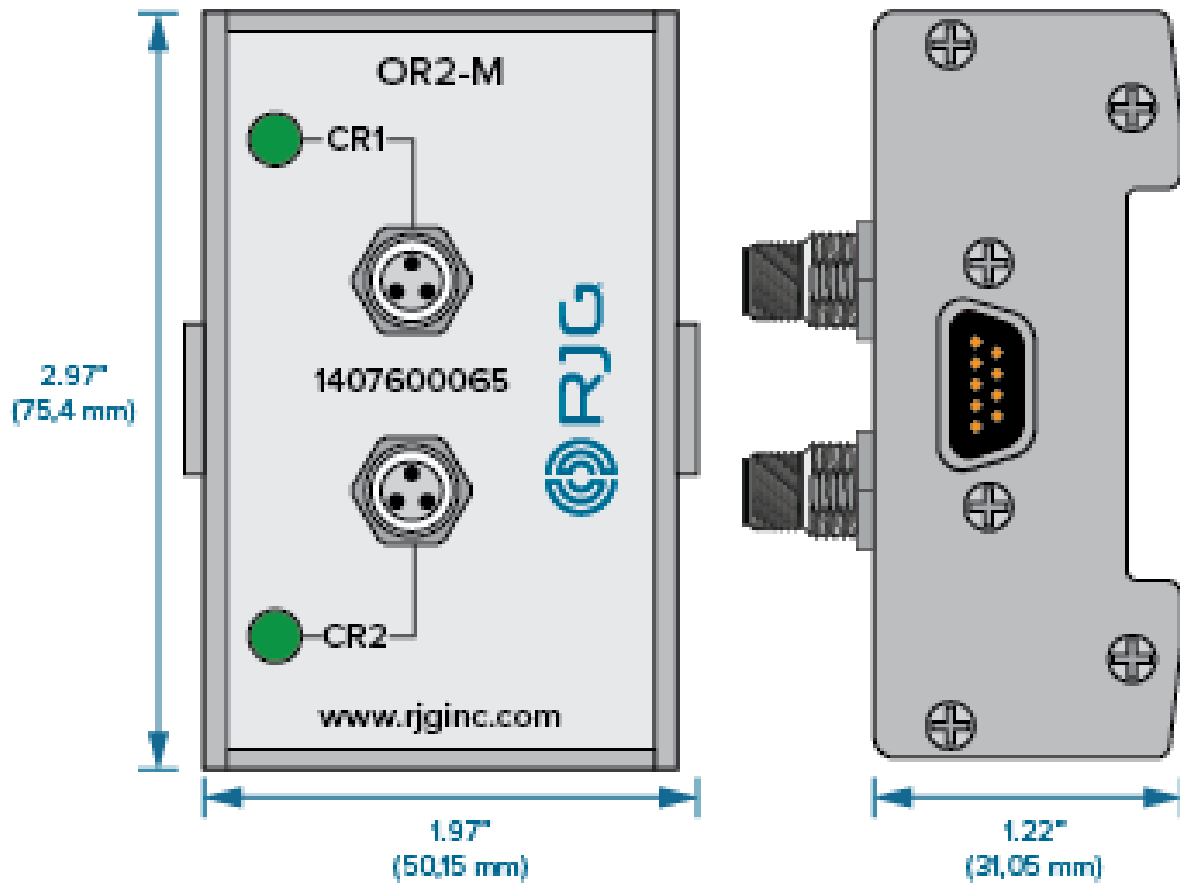
#### 2. Close Gate

The valve gate output sends a signal to close a gate.

#### 3. Enable Gate

The valve gate output sends a signal to enable a gate.

## DIMENSIONS



## CABLE LENGTH

The C-OR2-M-3M is 9.8 ft. (3 m) long.





## INSTALLATION

### INSTALLATION OVERVIEW

The shielded dual-relay output module is mounted to a solid surface, such as the machine frame, inside the molding machine on a DIN rail.

### OR2-M

The shielded dual-relay output module cable C-OR2-M-3M is wired directly to an input card on the machine, or sorting equipment, on one end, and connected to the OR2-M on the other using the four-pin connector. The shielded analog input module is connected to the ID7-M-SEQ (or DIN/LX-D), or other shielded module using the integrated amphenol connector.

### EDART CONNECTION

A Lynx cable CE-LX5 is connected to the Lynx port on the ID7-M-SEQ and a Lynx port on the eDART or CoPilot system to provide it with the machine's sequence signals for process monitoring and control calculations, along with the other installed machine interface module signals.



## INSTALLATION SPECIFICATIONS

### REQUIREMENTS

**CAUTION** Before beginning OR2-M installation, disconnect and lockout/tag-out any and all power to the molding machine. Failure to comply will result in personal injury or death, and damage or destruction of equipment.

### MOUNTING

Mount the OR2-M module to a solid surface—such as the molding machine frame—using the supplied 1.38” (35 mm) DIN rail. A clearance height of 6” (152,4 mm) from the face of the module is recommended.







**NOTES** Modules and connecting cables must be located away from any static sources, such as feeder tubes and material hoppers.

### WIRING

The OR-M is interfaced to a machine or robot’s input card; the machine can then be configured to stop if excessive reject parts are being produced, transfer the machine, or the robot can be configured to save only good parts. Determine the input voltage required by the machine/robot to facilitate the desired action (most machines/robots require 24 V DC).

**CAUTION** Always apply the appropriate backups provided by the machine or robot manufacturer.

The C-OR2-M-3M cable has colored-coded wires to simplify installation. Refer to the following table for the correct wire/signal combinations for installation.

RELAY	SIGNAL	COLOR
* 1A 30 V DC CONTACT RATING *		
Contact Relay 1	Normally Open	 Brown
Contact Relay 1	Common	 Black
Contact Relay 1	Normally Closed	 Blue
Contact Relay 2	Normally Open	 Brown
Contact Relay 2	Common	 Black
Contact Relay 2	Normally Closed	 Blue

Attach the common wire for contact relay 1 to the 24 V DC power source of the machine/robot controller; attach the normally open wire for contact relay 1 to the 24 V DC machine/robot input/output (I/O) card input terminals.



## INSTALLATION SPECIFICATIONS (continued)

### WIRING (continued)

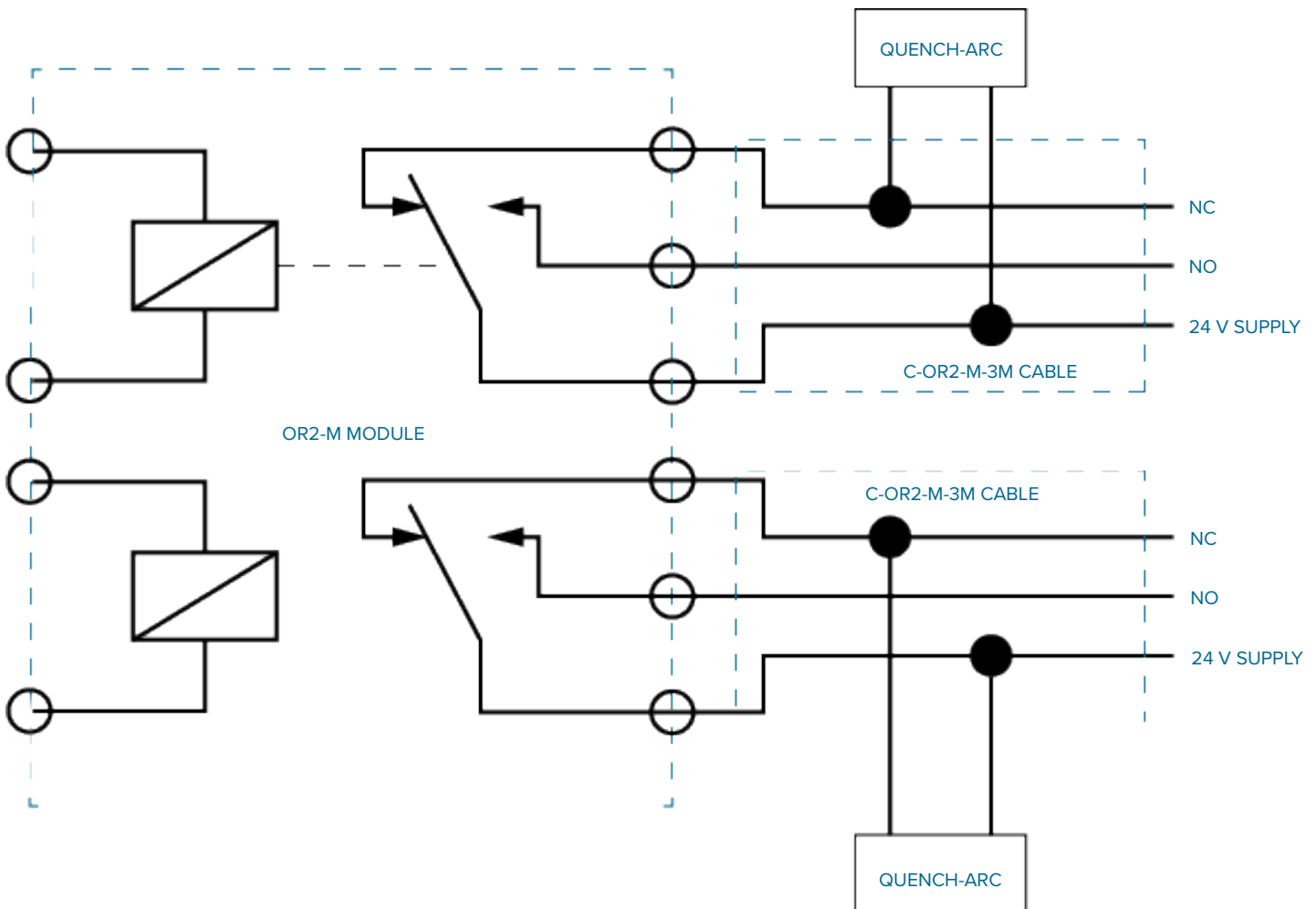
RJG, Inc. recommends the use of quench-arcs with dry contacts, preferably installed across the load—however, quench-arcs may also be placed across the contacts by attaching to the cable pigtails—refer to the figure below for installation.

**NOTES** RJG recommends quench-arc part number # 504M02QA100.

**DEFINITION** **Quench-arcs**—Quench-arcs increase relay life and reduce electromagnetic interference (EMI) emissions. It is preferred that the quench-arcs are attached across the load. However, the quench-arcs may alternately be placed across the contacts by attachment to the cable pigtails.

### CONNECTIONS

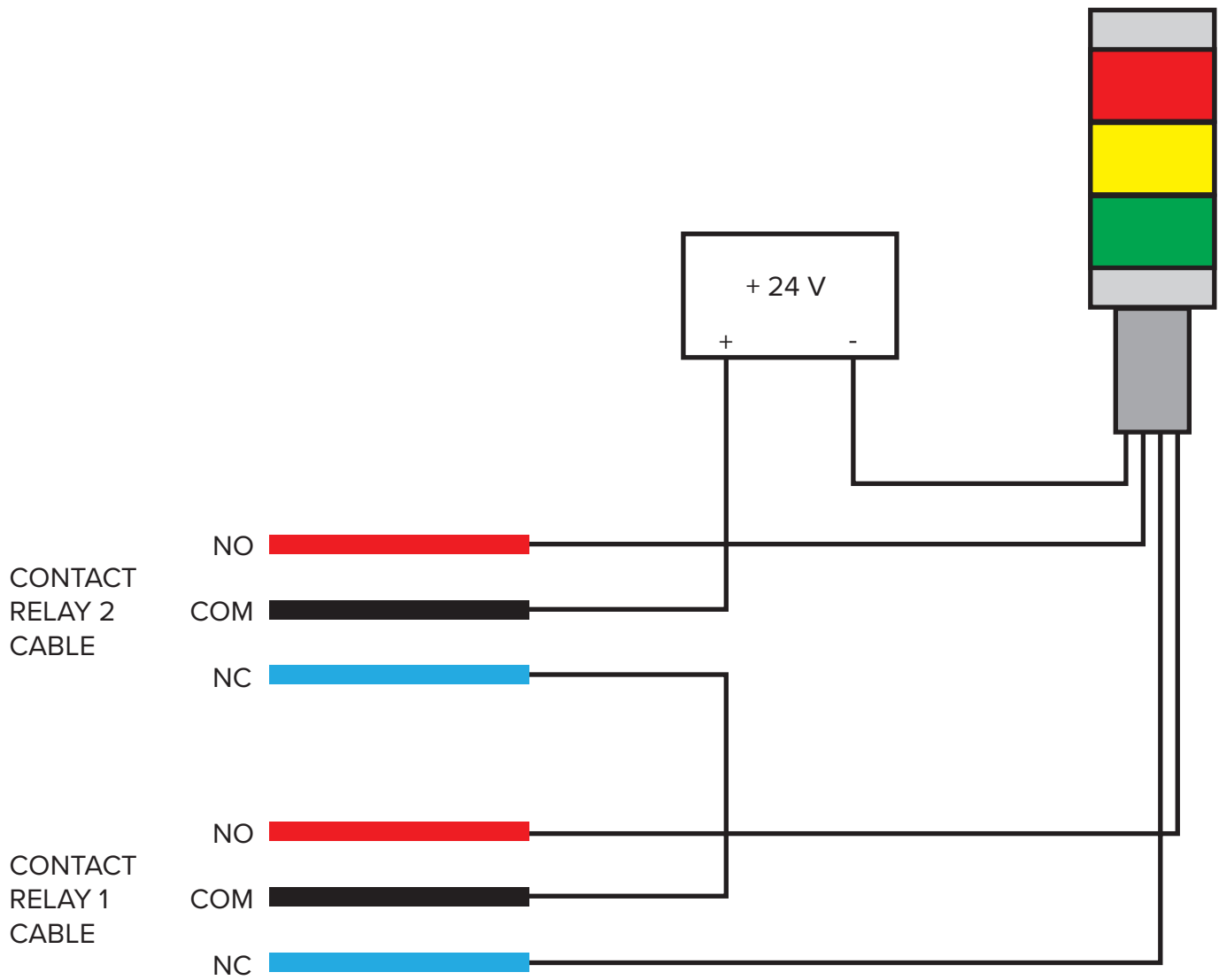
Connect the OR2-M to the shielded sequence module ID7-M-SEQ—or shielded communications module DIN/LX-D—using the integrated, side-mount amphenol connector. Connect the C-OR2-M-3M cable to the OR2-M module.



## INSTALLATION SPECIFICATIONS *(continued)*

### OR2-M WIRING FOR LIGHT TREES

Use the diagram below to utilize the OR2-M with a light tree.



## MAINTENANCE

The shielded dual-relay output module requires little to no maintenance provided that all installation instructions are followed.

### CLEANING

#### REGULAR CLEANING

Cables must be installed in areas free from oil, dirt, grime, and grease.

RJG, Inc. recommends the following cleaners:

- Microcare MCC-CCC Contact Cleaner C
- Microcare MCC-SPR SuprClean™
- Miller-Stephenson MS-730L Contact Re-Nu®

### TESTING

Test the OR2-M after assignment using the Part Diverter Controls tool in version 9.xx software, or in Machine Setup utilities in version 10.xx software.

### EDART VERSION 9.XX SOFTWARE

#### 1. Part Sorting

The OR2-M must be set up in the Sensor Locations, Alarm Settings, and Part Diverter Controls functions in order to sort parts.

Assign the OR2-M as a Sorting Output sensor type in the Sensor Locations tool; choose the sensor location from the drop-down menu.

The Alarm Settings tool is used to set alarms on specific process values; the software uses the set process values to sort the parts. Create an alarm in the Alarm Settings tool for the value on which to sort; check the box in the Sort column to apply sorting action to the alarm. The Sort button in the Part Diverter Controls must also be selected to sort parts.

In addition, the OR2-M can be configured in the Sensor Locations tool to activate an alarm or stop the machine if an excessive amount of rejects are produced. Assign the OR2-M as a Sorting Output type in the Sensor Locations tool; choose the Excessive Rejects sensor location from the drop-down menu. Define the reject and consecutive cycle limits in the Excessive Rejects Output window.

#### 2. Injection Enable

The OR2-M must be set up in the Sensor Locations to control injection. Assign the OR2-M as a Control Output type in the Sensor Locations tool; choose the Inject Enable sensor location from the drop-down menu.

The injection enable function allows the connected relay contact closer to stay closed as long as the system is operating properly; if a failure occurs the output opens, and the machine stops to prevent any damage.

## TESTING (continued)

### 3. V→P

The OR2-M is set up to transfer the injection molding machine from the velocity stage to the pressure stage in the cycle. The OR2-M must be set up in the Sensor Locations.

To test if the input is detected by the machine, use the V→P Output Test function. The Velocity to Pressure Transfer tool Output Test function is accessible from the Settings menu. Select Output Test, then press the on and off buttons and check the press controller's diagnostic page for changes in the input. The eDART disables the test button when the press is cycling.

If the inputs are correct and detected by the machine, perform the following to ensure the correct function:

Set up a process (DECOUPLED MOLDING® II or III) with transfer from pressure to hold based on the machine's screw position.

Make sure the process ends with little cushion, likely bottoming out shortly after transfer—this will prevent mold damage if the transfer does not work.

Make a template.

Place the cursor on the Cycle Graph slightly before the machine pressure curve can be seen dropping into hold.

Record the volume measurement from the cursor. Open the V→P tool and select the check mark next to the "Injection Volume Exceeds" field to enable control; enter the recorded volume measurement and select the correct units of measure.

Enable the machine's external transfer; some machines allow both external and internal and some force the use of only one or the other.

The V->P volume switchover should show "Active" and the machine should transfer earlier as shown below

The transfer point should be movable by changing the volume number in the V→P tool. If the curve does not change from the template (as shown below) then the machine is not accepting the transfer signal from the eDART.

The backup set points for time, position, or pressure on the machine must be verified and used during cavity pressure transfer control. In the event that the cavity pressure transfer control input is not detected by the machine controller, the backup set points prevent damage to the tool.

## TESTING (continued)

### EDART VERSION 10.XX SOFTWARE

#### 1. Part Sorting

The OR2-M must be set up in Machine Setup>Outputs>Sorting, Alarm Settings, and Part Diverter Controls functions in order to sort parts.

Assign the OR2-M as a Sorting Output sensor type; choose the desired sorting type (Failsafe Good Part Output, Traditional Output, or Individual Cavity Sorting) from the drop-down menu. Individual Cavity sorting setup must be completed in Mold Setup>Outputs, and can be tested in Mold Setup>Test Outputs.

Traditional Output sorting is based on process alarm limits. The Process Setup>Alarm Limits tool is used to set alarms on specific process values; the software uses the set process values to sort the parts. Create an alarm in the Alarm Limits tool. Set up sorting actions in Process Setup>Sorting Actions.

In addition, the OR2-M can be configured in the Machine Setup>Outputs and Process Settings>Control Settings tool to activate an alarm or stop the machine if an excessive amount of rejects are produced. Assign the OR2-M as a Sorting Output type in Machine Setup>Outputs; choose the Excessive Rejects sensor location from the drop-down menu. Define the reject and consecutive cycle limits in Process Settings>Control Settings.

#### 2. Injection Enable

The OR2-M must be set up in Machine Setup>Outputs>Control to control injection. Assign the OR2-M as a Control type in Machine Setup>Outputs tool; choose the Inject Enable location from the drop-down menu.

The injection enable function allows the connected relay contact closer to stay closed as long as the system is operating properly; if a failure occurs the output opens, and the machine stops to prevent any damage.

#### 3. V→P

The OR2-M is set up to transfer the injection molding machine from the velocity stage to the pressure stage in the cycle. The OR2-M must be set up in Machine Setup>Outputs.

To test if the input is detected by the machine, use the Machine Setup>Tests Output function. Select V→P Transfer, then press the Test button and check the press controller's diagnostic page for changes in the input. The eDART disables the test button when the press is cycling.

If the inputs are correct and detected by the machine, perform the following to ensure the correct function:

Set up a process (DECOUPLED MOLDING® II or III) with transfer from pressure to hold based on the machine's screw position.

Make sure the process ends with little cushion, likely bottoming out shortly after transfer—this will prevent mold damage if the transfer does not work.

## TESTING (continued)

Make a template.

Place the cursor on the Cycle Graph slightly before the machine pressure curve can be seen dropping into hold.

Record the volume measurement from the cursor. Open the V to P Control tool from the Options tab and select the check mark next to the “Injection Volume Exceeds” field to enable control; enter the recorded volume measurement and select the correct units of measure.

The transfer point should be movable by changing the volume number in the V to P Control tool. If the curve does not change from the template (as shown below) then the machine is not accepting the transfer signal from the eDART.

The backup set points for time, position, or pressure on the machine must be verified and used during cavity pressure transfer control. In the event that the cavity pressure transfer control input is not detected by the machine controller, the backup set points prevent damage to the tool.

## COPILOT SYSTEM SOFTWARE

Refer to the CoPilot System User Guide for all OR2-M setup and testing information.

## FUSE REPLACEMENT

Both relay contacts have replaceable fuses; a spare fuse is supplied for each set of contacts, located inside the OR2-M module. Read and follow all instructions, warnings, cautions, and notes to replace a fuse with one of the spare fuses.

## REQUIREMENTS

The module must be removed from the mounting location and any other hardware to access the replaceable and spare fuses within the module.

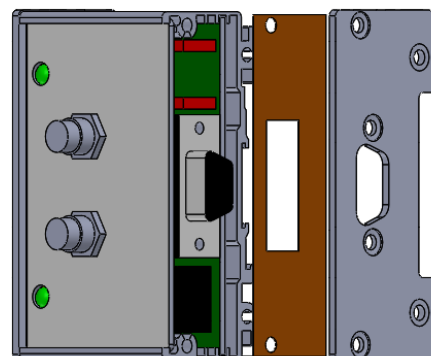
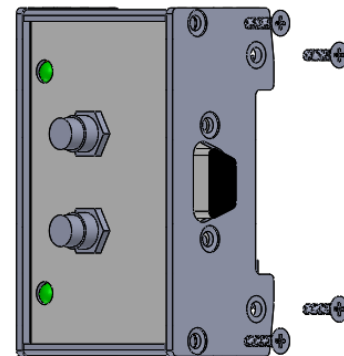
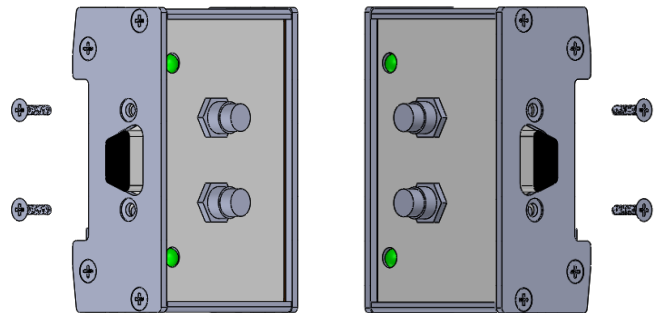
## INSTRUCTIONS

1. Remove two (2) 4-40 x 3/8" connector screws from the module's right side panel connector; remove two (2) 4-40 x 3/8" connector screws from the module's left side panel connector; retain.
2. Remove four (4) M3 x 8 mm panel screws from the module's right side panel; retain.
3. Remove the right side panel and EMI gasket from the module; retain.

**CAUTION** Always disconnect and lockout/tag-out any and all power before performing maintenance on equipment. Failure to comply will result in personal injury or death, and damage or destruction of equipment.

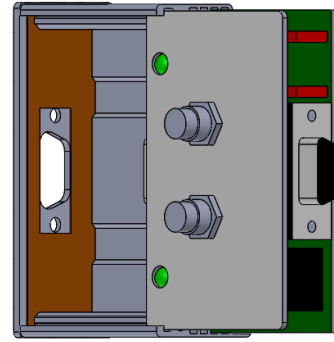
## TOOLS

- Personal grounding strap
- Phillips screw driver
- Fuse puller

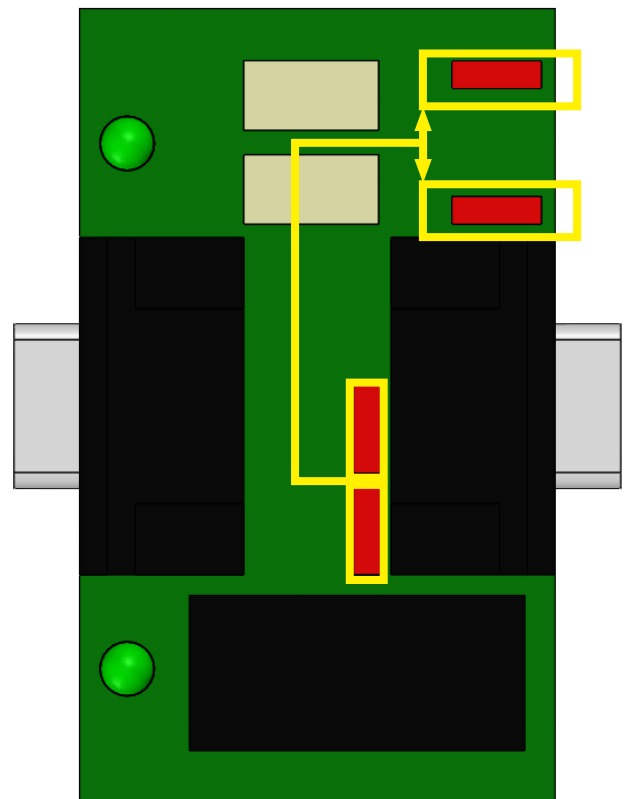


## FUSE REPLACEMENT *(continued)*

4. Gently slide the front plate and board assembly out of the module case.
5. Pull away and twist the top lid assembly from the board.



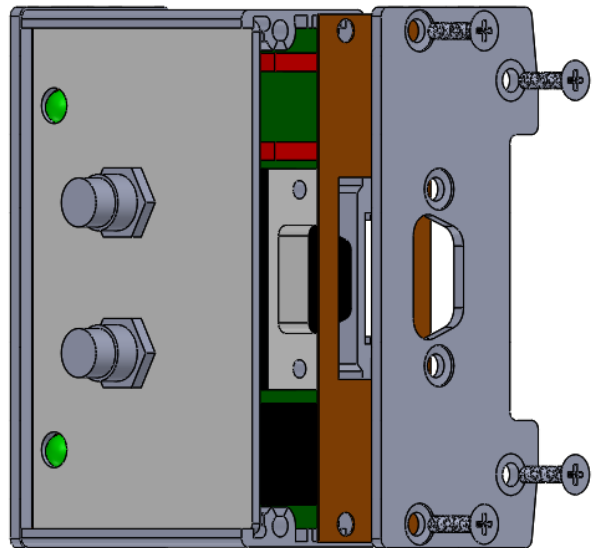
6. Locate the fuse to be replaced; gently pull up to remove fuse.
7. Locate spare fuse to be used; gently pull up to remove spare fuse.
8. Gently, but firmly, insert spare fuse into replaceable fuse location.



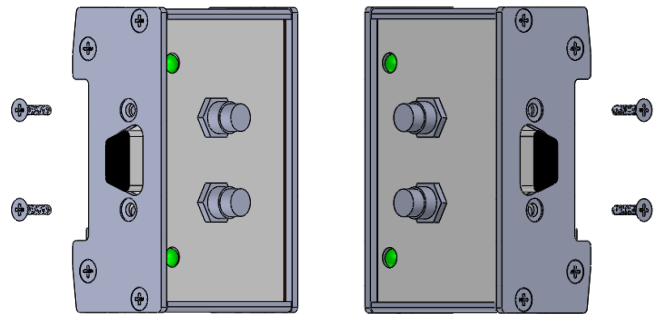


## FUSE REPLACEMENT (continued)

9. Twist the top lid assembly around and push down to locate the LEDs into holes in front plate.
10. Gently slide the front plate and board assembly into the module case.
11. Install the module's EMI gasket and right side panel with four (4) M3 x 8 mm panel screws; torque to 5 in.-lb. ( $\pm 5$ ).



12. Secure the module's right side connector with two (2) 4-40 x 3/8" connector screws; secure the module's left side connector with two (2) 4-40 x 3/8" connector screws. Torque the connector screws to 35 in.-oz.



## WARRANTY

### RJG, INC. STANDARD WARRANTY

RJG, Inc. is confident in the quality and robustness of the shielded dual-output relay modules, and so are offering a one-year warranty. RJG's products are guaranteed against defects in material and workmanship for one year from the original date of purchase. The warranty is void if it is determined that the adapter was subjected to abuse or neglect beyond the normal wear and tear of field use, or in the event the adapter box has been opened by the customer.

### PRODUCT DISCLAIMER

RJG, Inc. is not responsible for the improper installation of this equipment, or any other equipment RJG manufactures.

Proper RJG equipment installation does not interfere with original equipment safety features of the machine. Safety mechanisms on all machines should never be removed.

### eDART SYSTEM COMMON SORTING SETUPS

#### GOOD OR FAIL-SAFE SORTING

If the “reject” sorting output is being used but the “good” sorting output is not from the eDART, then fail-safe sorting is not being used.

Fail-safe sorting prevents “bad” parts from being placed with “good” parts; when set up correctly in the eDART software, if anything in the system is not working properly, then no parts will be placed with good parts/shipped to the customer.

The sorting output is assigned as “good” in the software; the sorting equipment moves the part to a “good” location. The eDART must be running, have the alarms set correctly, and the cables/wiring connected to the part sorting equipment.

#### THREE-WAY SORTING

Sorting while processing expensive inserts or expensive materials with tight alarms can cause “reject” of some good parts. Using three-way sorting, alarms can instead be set for just those things that are known to be “bad”, such as no pressure at the end of the cavity (short shots), while parts that may need inspection can be sorted as “suspect” if warnings are set more closely.

The sorting equipment is told to put parts into the “good” bin only when the “good” signal is on. Parts go into the “reject” bin only when the “reject” signal is on. If neither signal comes on then the parts are considered “suspect”—it was not determined whether the parts are “good” or “bad”.

The parts in the “suspect” bin can then be manually sorted and, if good, can then be sold. The sorting load is dramatically reduced to just the “suspect” parts instead of all parts.

Three-way sorting is also fail-safe. If the equipment fails, the power is off, or the job is not started, then no “bad” parts are shipped to the customer—each part is sorted as “suspect”. Any time a level goes out of limits on a “warning” line (with no rejects at the same time), the parts are sorted as “suspect”.

If many “good” parts are discovered in the “suspect” parts at inspection, then it is okay incrementally widen the warning band; if many “bad” parts in the “suspect” parts at inspection, then it is okay to incrementally tighten the alarm band. Fewer and fewer parts will fall in the “suspect” range without the risk of sending “bad” parts to the customer.

## eDART SYSTEM SORTING ERRORS AND SOLUTIONS

### ROBOT SETTINGS AND TIMING

Problem: Robot timing is mis-programmed to expect a change when there is none, or is detecting the sorting signal too early.

Solution: Thoroughly test the robot or conveyor timing and settings.

#### 1. Settings

Sorting equipment can be level-actuated or edge-actuated; level-actuated equipment does not require a change in output state each cycle to sort parts, while edge-actuated equipments requires a change in output state each cycle to sort parts. Essentially, if a cycle is good and the next few cycles remain good, then level-actuated equipment will assume that cycles are good until a bad signal is sent. Edge-actuated equipment must have a cycle good or bad indication at each cycle to operate correctly.

For level-actuated equipment, check the “Hold diverter position until alarm changes” box in the Diverter Timing Controls function of the eDART software. For edge-actuated sorting, check and fill the “Hold diverter position \_\_ second(s) after the cycle ends” box in the eDART software.

#### 2. Timing

In addition to the correct settings for equipment, the correct timing for signals must be present.

Part sorting signals are calculated using the data collected by the eDART during the cycle; the eDART must calculate the part condition before the cycle is over/ before the mold opens in order to send the equipment the proper sorting signal and for the equipment to react appropriately to the signal. The sorting equipment must be set up so that it is not looking for a sorting signal before the eDART is able to provide one.

## **SORTING ERRORS AND SOLUTIONS (continued)**

### **PINCHED OR STUCK PARTS**

Problem: Bad parts can get stuck on the sides of a conveyor or hung up on cooling lines/other apparatus as they exit the mold, preventing them from being sorted as “bad” before the part exits the conveyor/mold on which it was stuck—sometimes being sorted as “good”.

Solution: Make sure all parts can transit smoothly through the conveyor or other automation. Develop a culture where even one anomalous event is a cause for action. For example, if a part is observed dragging on the side of the conveyor, this must be cause for an action item to make sure it never happens again—regardless of whether the part was “bad” or “good”.

Also, wire the Lynx machine sequence module correctly to include the mold opening signal; when wired, the eDART will detect if two or more mold-opening signals occur at the end of a cycle and automatically switch the sorting control to “bad” or “reject”.

### **EQUIPMENT FAILURES**

Problem: Flipper chutes do not go into position quickly enough due to leaky seals, low air pressure, or other mechanical malfunctions. Robot vacuum systems become weak due to clogged air filters.

Solution: Institute regular maintenance of equipment (air filters and other automation).

### **HUMAN ERROR**

Problem: Parts are picked off of the conveyor and placed in the wrong location; abnormal parts meant for quality inspection accidentally set down where they enter the stream of parts for shipment.

Solution: Cover conveyors and parts bins so that parts cannot be taken out or placed in the bins accidentally. Drop all rejects into a grinder immediately so that they cannot be shipped by accident.

## CUSTOMER SUPPORT

Contact RJG's Customer Support team by phone or email.

RJG, Inc. Customer Support

P: 800.472.0566 (Toll Free)

P: +1.231.933.8170

[www.rjginc.com/support](http://www.rjginc.com/support)

**General Questions**      RMA Request      Sensor Selection & Placement

Have a question? We're here for you! Be sure to check out our knowledge base first to see if you can find the answer to your question there. Or please feel free to reach out to our customer support team anytime at:  
Email: [support@rjginc.com](mailto:support@rjginc.com)  
Phone: +1(231) 933-8170 Or Toll Free: +1(800) 472-0566  
Or complete the form below:

<b>First Name *</b> First Name*	<b>Last Name *</b> Last Name*	<b>Company</b> Company*
<b>Job Title *</b> Job Title*	<b>Phone *</b> Phone Number*	<b>Email *</b> Email Address*

## RELATED PRODUCTS

The shielded sequence module is compatible with other RJG, Inc. products for use with the eDART and CoPilot process control and monitoring systems.

## COMPATIBLE PRODUCTS

### SHIELDED DUAL-RELAY OUTPUT MODULE CABLE C-OR2-M-3M

The shielded dual-relay output module cable C-OR2-M-3M (1 at right) cable features a metal sheathing and shielding suited for the heat and stress found in injection molding environments. Designed specifically for use with RJG, Inc.'s dual-relay output module OR2-M and the eDART or CoPilot systems, the C-IA1-M-3M provides a connection from molding machines' input card and the RJG, Inc. C-OR2-M-3M.

### LYNX CABLES CE-LX5

The Lynx sensor cable (2 at right) is a polypropylene-coated cable suited for the heat and stress found in injection molding environments. The cable is available in lengths 11.8–472.4" (0,3–12 m), and can be ordered with straight or 90° fittings. One CE-LX5 is required to interface the ID7-M-SEQ with the eDART or CoPilot system.



## SIMILAR PRODUCTS

The following products, similar to the OR2-M, are compatible for use with the eDART or Copilot process control and monitoring systems.

### LYNX COMMUNICATIONS ADAPTER DIN/LX-D

The Lynx communications adapter DIN/LX-D (1 at right) is a shielded, DIN-rail-mounted module that interfaces other RJG, Inc. shielded machine interface modules with the eDART or CoPilot system when the ID7-M-SEQ is not used. This module is shielded to ensure high quality data even in rugged molding environments, and designed to be mounted on standard 35 mm DIN rails often found in machine panels.







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