RJG
MOLD SMART

PRODUCT MANUAL

Lynx™ Digital Flow-Temperature Interface Module

IA2-M-DFT

Training and Technology for Injection Molding

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PRODUCT MANUAL

LYNX™ DIGITAL FLOW-TEMPERATURE INTERFACE MODULE

IA2-M-DFT

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PRODUCT MANUAL

LYNX™ DIGITAL FLOW-TEMPERATURE INTERFACE MODULE

IA2-M-DFT

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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

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.*

NOTES

PRODUCT DESCRIPTION

The Lynx™digital flow-temperature interface module IA2-M-DFT provides all the inputs and outputs needed to interface the eDART® or CoPilot® System to Smartflow®'s TracerVM™and TracerVM™with User Interface line of flowmeters. The IA2-M-DFT is shielded to ensure high quality data even in rugged molding environments and is designed for use to with other Lynx shielded interface modules.

APPLICATIONS

PROCESS MONITORING AND CONTROL

The IA2-M-DFT is used to connect a Smartflow® TracerVM™or TracerVM™with User Interface flow-temperature meter to the eDART or CoPilot system for process control and monitoring purposes.

OPERATION

The interface module can measure either the total flow input to the mold or to individual circuits, or water input temperature to the mold or to individual circuits. When interfaced with the eDART or CoPilot system, the IA2-M-DFT and Smartflow® TracerVM™ or TracerVM™ with User Interface flow-temperature meter allows users to perform a variety of functions.

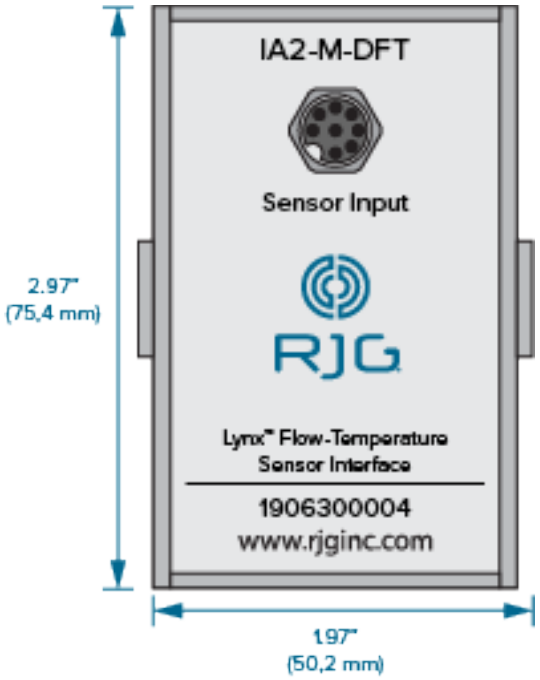
FLOW

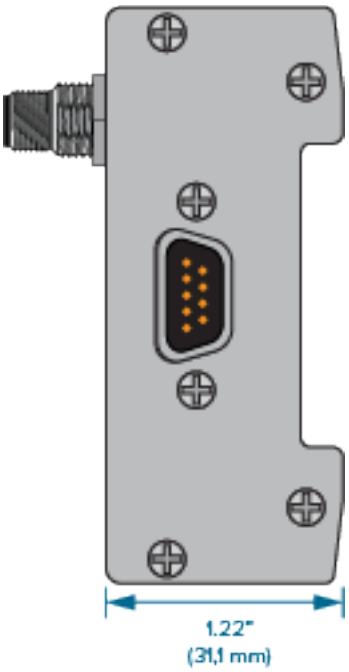
- Reject parts if the flow doesn't meet set requirements to make a good part
- Create a template of the flow
- Overlay GPM curves on the cycle graph
- Set alarms around peak values of the coolant flow
- Set excessive rejects to stop the machine if the coolant flow alarms rejects parts more than the set thresholds

TEMPERATURE

- Determine if the water temperature control unit is delivering the correct temperature needed to make good parts
- Reject parts if the temperature doesn't meet set requirements to make a good part
- Create a template of the coolant temperature
- Overlay temperature curves on the cycle graph
- Set alarms around peak values of the coolant temperature
- Set excessive rejects to stop the machine if the coolant temperature alarms rejects parts more than the set thresholds

DIMENSIONS


IA2-M-DFT
Sensor Input
RJG
Lynx™ Flow-Temperature
Sensor Interface
1906300004
www.rjginc.com
2.97"
(75,4 mm)
1.97"
(50,2 mm)


1.22"
(31,1 mm)

INSTALLATION

INSTALLATION OVERVIEW

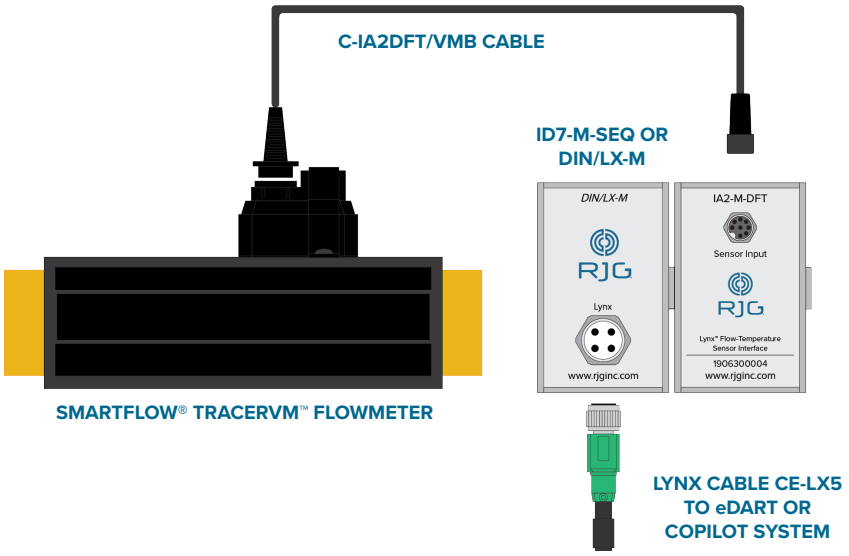
The shielded, digital flow-temperature interface module is mounted to a solid surface, such as the machine frame, inside the molding machine on a DIN rail.

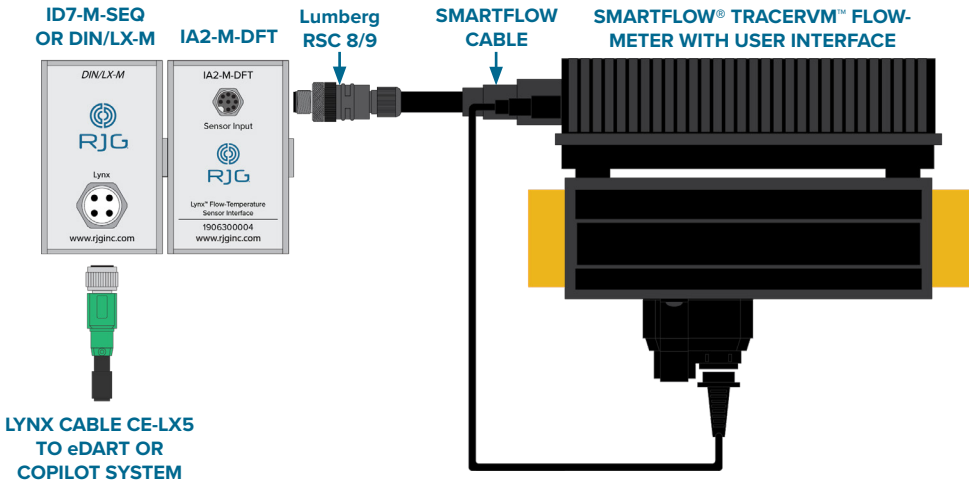
IA2-M-DFT

The shielded, digital flow-temperature interface module cable is connected directly to the Smartflow® TracerVM™ flow-temperature meter on one end, and connected to the IA2-M-DFT on the other using the eight-pin connector. The shielded, digital flow-temperature interface module is connected to the ID7-M-SEQ, IA1-M-V, OR2-M, OA1-M-V, or DIN/LX-D using the integrated amphenol connector. Either an ID7-M-SEQ or DIN/LX-M shielded module is required to physically connect the IA2-M-DFT to the eDART or CoPilot system. RJG does not offer the Smartflow TracerVM with user interface; if purchased separately, a cable and connector will be supplied to wire the flowmeter to the IA2-M-DFT.

eDART OR COPILOT SYSTEM CONNECTION

A Lynx cable CE-LX5 is connected to the Lynx port on the ID7-M-SEQ or DIN/LX-M and to 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

The instructions that follow are a general guide; actual steps necessary to install this product will vary based on injection molding machine manufacturer, model, and options.

REQUIREMENTS

CAUTION *Before beginning IA2-M-DFT installation, disconnect and lockout/tagout 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 IA2-M-DFT module to a solid surface—such as the molding machine frame—using the supplied 1.38" (35 mm) DIN rail. A clearance height of 6.0" (152,4 mm) from the face of the module is recommended. Connect the IA2-M-DFT to the ID7-M-SEQ or DIN/LX-M using the side-integrated amphenol connector.

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

WIRING

The Smartflow flowmeter will include the correct cabling required to connect the IA2-M-DFT and Smarflow flowmeter. However, if the flowmeter is purchased outside of RJG, or a flowmeter with user interface is purchased, then a cable will need to be wired to connect the IA2-M-DFT. Wire the Smartflow cable to the Lumberg RSC 8/9 connector (purchased from RJG, Inc.), referring to the following table for correct wire/signal combinations.

1. Smarflow TracerVM With User Interface

PIN	SIGNAL	COLOR
1	Flow	Orange
2	Power Ground	Black
3	Temperature	Violet
4	Analog Ground	Blue
5	5 V	n/c
6	10.8 V	Yellow
7	n/c	n/c
8	n/c	n/c

2. Smarflow TracerVM

PIN	SIGNAL	COLOR
1	Flow	White
2	Power Ground	Green
3	Temperature	Yellow
4	Analog Ground	Jumper to Green
5	5 V	Brown
6	10.8 V	n/c
7	n/c	n/c
8	n/c	n/c

INSTALLATION SPECIFICATIONS (*continued*)

CABLING

1. Smartflow TracerVM Purchased from RJG

Attach the C-IA2DFT/VMB cable to the Smartflow TracerVM flow-temperature meter on one end, and connect to the IA2-M-DFT on the other using the four-pin connector.

A Lynx cable CE-LX5 must connect the ID7-M-SEQ or DIN/LX-M to the eDART or CoPilot System.

1. Smartflow TracerVM Purchased outside of RJG, or SmartSmartflow TracerVM with User Interface

Attach the user-construted cable to the Smartflow TracerVM flow-temperature meter on one end, and connect to the IA2-M-DFT on the other using the four-pin connector.

2. Replacing an IA2-M-FT with IA2-M-DFT

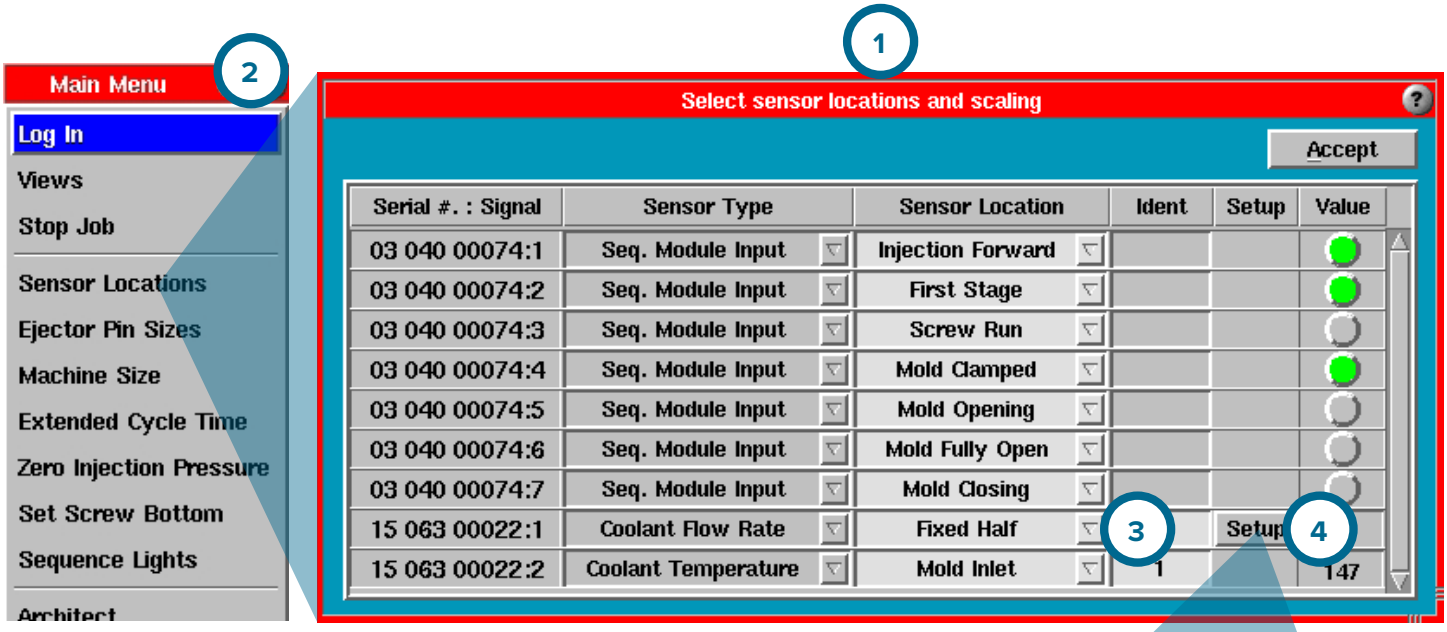
Attach the cable to the Smartflow TracerVM/Smartflow TracerVM with User Interface flow-temperature meter on one end, and connect to the IA2-M-DFT on the other using the four-pin connector.

A Lynx cable CE-LX5 must connect the ID7-M-SEQ or DIN/LX-M to the eDART or CoPilot System.

SOFTWARE SETUP

eDART SOFTWARE VERSION 9.XX

Open the 1 Sensor Locations window from the 2 Main Menu.

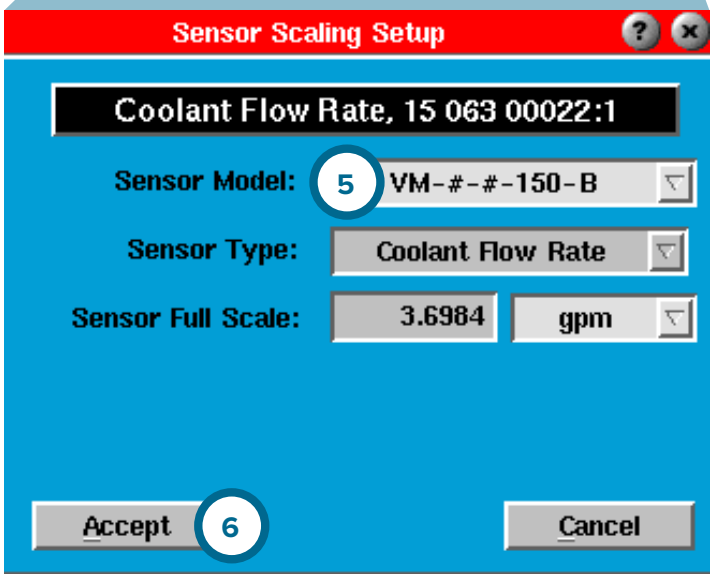


Click the drop-down menu in the 3 Sensor Location column in line with the "Coolant Flow Rate" in the Sensor Type column to set the location.

Click the 4 Setup button in the Setup column in line with the VM-#-#-150-B flow meter's Serial#.:Signal; the Sensor Type will indicate "Coolant Flow Rate" and "Coolant Temperature".

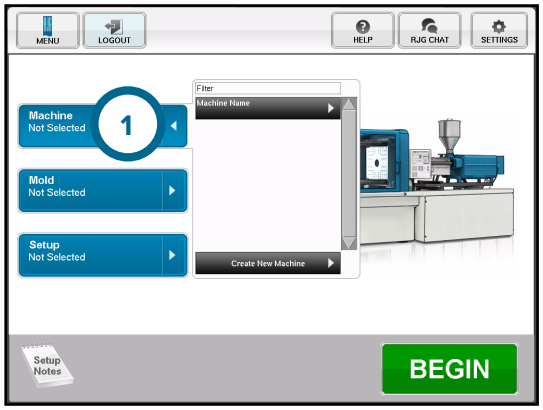
In the Sensor Scaling Setup window, select the 5 VM-#-#-150-B sensor model from the Sensor Model drop-down menu.

Click the 6 Accept button.

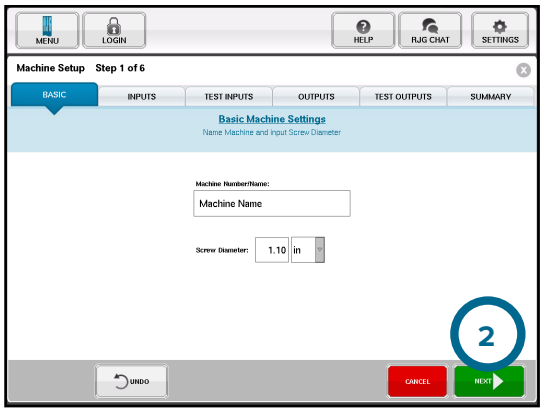


eDART SOFTWARE VERSION 10.XX

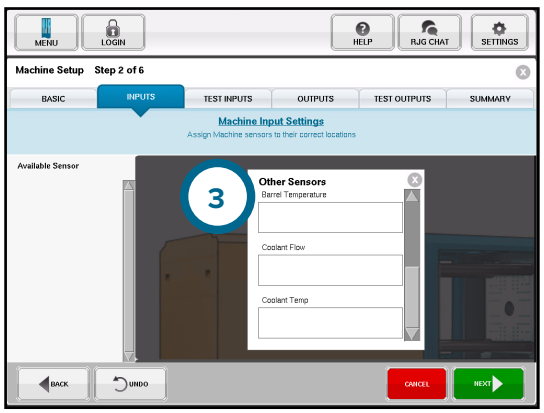
Click the 1 Machine button, and then click the arrow next to an existing machine name or the Create New Machine button.



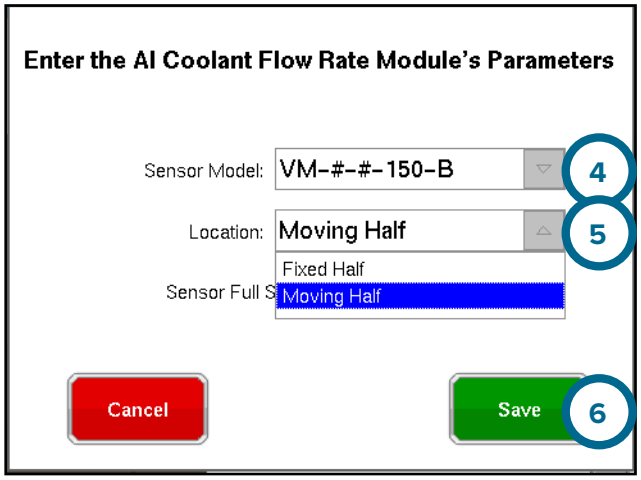
Enter a Machine Name/Number and Screw Diameter, if creating an new machine. Click the 2 NEXT button.



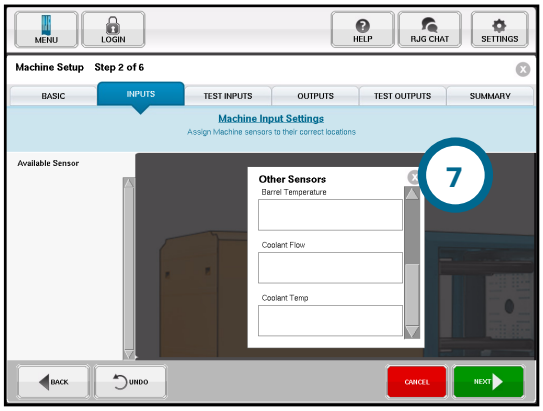
Click, hold, and drag the flow meter from the Available Sensor list and drop into the 3 Other Sensors box.



In the Coolant Flow Rate pop-up window, select the 4 VM-#-#-150-B sensor model from the Sensor Model drop-down menu. Select the 5 Location from the drop-down menu. Click the 6 Save button.



Click the 7 exit button to close the Other Sensors window.



Complete the Machine Setup.

COPILOT SOFTWARE SETUP

Refer to the **CoPilot System Software User Guide** for all software setup and use information—available for download at www.rjginc.com.

MAINTENANCE

The shielded, digital flow-temperature interface module requires little to no maintenance provided that all installation instructions are followed.

WARRANTY

RJG, INC. STANDARD WARRANTY

RJG, Inc. is confident in the quality and robustness of the shielded, digital flow-temperature interface module, 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.

CUSTOMER SUPPORT

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

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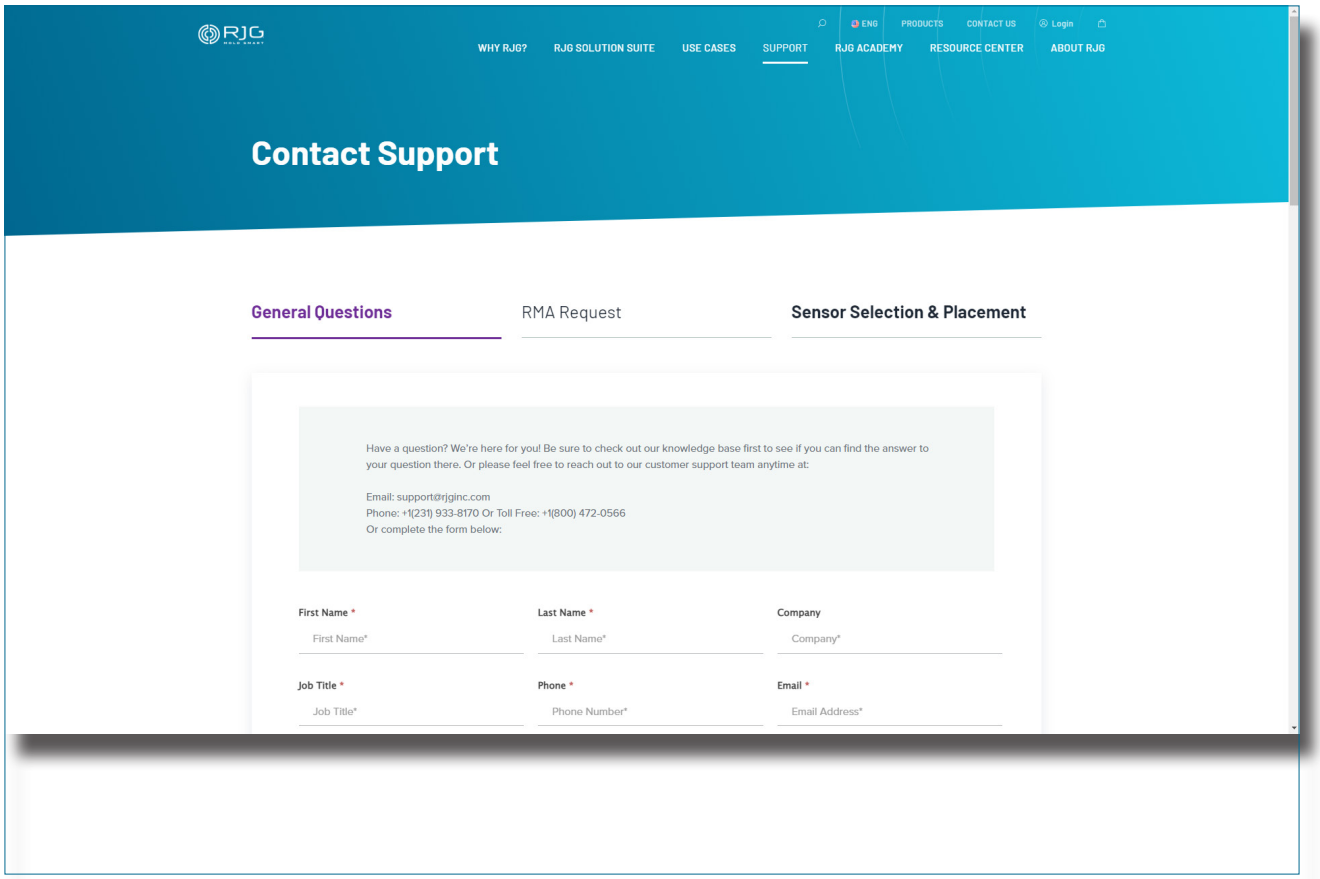
P: +1.231.933.8170

support@rjginc.com

www.rjginc.com/support



RELATED PRODUCTS

The shielded, digital flow-temperature interface module is compatible with other RJG, Inc. products for use with the eDART or CoPilot process control and monitoring systems.

COMPATIBLE PRODUCTS

SMARTFLOW TRACERVM WITH USER INTERFACE FLOW-TEMPERATURE METER

Smartflow 1/2” NPT 2-40 LPM

The Smartflow TracerVM and Smartflow TracerVM with User Interface (1 at right) is a simple flow meter to measure either the total input to the mold or to individual circuits, or the temperature input to the mold or to individual circuits. When interfaced with the eDART or CoPilot System, users can access and use data such as: excessive reject control, summary variables, template values, and summary and cycle values.

1

LYNX SHIELDED SEQUENCE MODULE ID7-M-SEQ

The Lynx shielded sequence module ID7-M-SEQ (2 at right) is a DIN-rail-mounted module that is wired to the molding machine in order to collect 24 V DC timing signals for use with the eDART system, including injection forward, screw run, mold closed, first stage, and mold opening.

2

SIMILAR PRODUCTS

The following products, similar to the IA2-M-DFT, 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.

LYNX SHIELDED DUAL-RELAY OUTPUT MODULE OR2-M

The Lynx shielded dual-relay output module OR2-M (2 at right) is a shielded, DIN-rail-mounted module that interfaces the eDART or CoPilot system and sorting equipment or injection molding machines to implement part containment or control transfer. 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.

1

2

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