VISCOINDICATOR
'DROP TO FLOOR' ONLINE RHEOMETER

- Based on the proven technology of our successful ViscoSensor and CMR IV series

- Small footprint for easy set-up and integration into exsisting and/or new machinery

- Monitors specs continuously, in real time for easy adjustments to maintain quality

REAL-TIME MEASUREMENTS

Specifically designed for the thermoplastics resin industry, the ViscoIndicator provides continuous measurements of the melt flow rate, apparent viscosiity, or intrinsic viscosity directly on the extruder.

USER-FRIENDLY INTERFACE

The ViscoIndicator online rheometer duplicates the test conditions of a laboritory Melt Flow Rate (MFR) tester or capillary rheometer. Melt viscosity measurments such as melt flow rate and intrinsic viscosity are primary specifications of thermoplastic resins. MFR and melt viscosity are related to polymer molecular properties of their product as well as polymer processability. The ViscoIndicator has a look and feel that will be familiar to most shop personnel.

INCREASES EFFICIENCY

Why is this important — it lowers the training time to become effective in measuring the rheological properties of your polymer process. This along with the ease of connection gets you up an running in the mimimum amount of time.

FEATURES

- Quick changing of capillaries

- material is not returned to process stream

- 1/2 -20 Mounting Port that is compatable with the standard pressure port on extruders

- User Interface based on Windows™ 10 IoT allowing users to leverage familiar Microsoft services

- One cable power cord and simple cable bundle with robust connectors for quick interconnection between RSU, RCU, and HMI – ideal for self insallation

- Provides continuous indication of both Melt Flow Rate, apparent and/or intrinsic viscosity

- Variety of heated material transfer line options available that enable rheological head to mount into tight spaces

- Comes standard with Dynisco Vertex™ Mercury Free pressure transducer for high quality
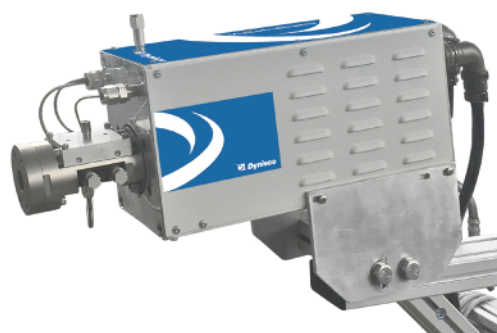
VISCOINDICATOR iRCU

A Rheological Control Unit (iRCU) that controls the measurment parameters (temperature, pressure, flow rate), and provides communications to an HMI. This combination provides the system with processing power and high end graphics allowing the iRCU to provide +/- 2% Full Scale Accuracy. The iRCU provides the processor the ability to measure Melt Flow Ratio, Relative Viscosity Intrinsic Viscosity, and Melt Viscosity in typical end user environments. All of which create a cost-effective system that reduces the risk of failure to an acceptable level. The ViscoIndicator controls are based on an industry standard Windows 10 IoT. External connectivity can be accomplished through Ethernet, Wireless Connection to Windows 10 computers, or USB. A color touch screen, local human-machine interface (HMI) is standard. The HMI allows for the calibration and configuration of the system and is typically housed in a separate enclosure located within a distance of 10 meters from the iRCU

VISCOINDICATOR HMI

The Human Machine Interface (HMI) remotely manages test parameters and provides measured and computed material properties. It provides rheological data similar to a Laboratory Capillary Rheometer or MFR readings similar to a Melt FLow Indexer.

THE VISCOINDICATOR RSU

A Rheological Sensing Unit (RSU) that connects directly to the process and samples, conditions, and measures the properties of resin. It can be mounted on extruders, reactors, or molten polymer transfer lines in various orientations. It uses a metering pump to isolate it from the process, to direct the molten polymer across interchangable capillaries, and discharge a minimal amount of materialat a rate of aproximatly 0.5lb/hr (0.2kg/hr). A three wire platinum RTD is used to control and measure the temperature of the molten polymer. A Vertex Mercury Free pressure transducer mounted directly befor the capillary die is used to capture the pressure drop.
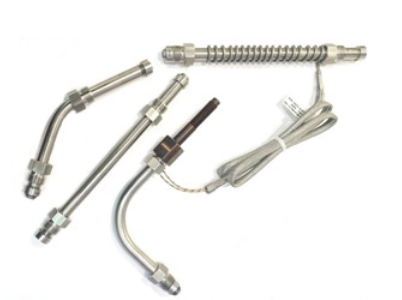

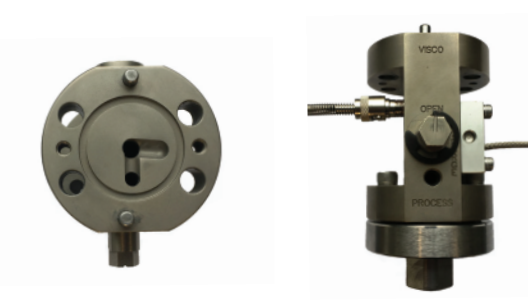ViscoIndicator RSU

ViscoIndicator iRCU

ViscoIndicator HMI

PHYSICAL SPECIFICATIONS	
MELT FLOW INDEX RANGE	0.1 to 25,000 g/10min (With Melt Density of 0.75g/cc and 2.16Kg test load)
VISCOSITY RANGE	10 -10^5 PaS (Applicable Shear Rate Vary with Viscosity)
INTRINISC VISCOSITY RANGE	0.2-5.0
SHEAR RATE	0.1 to 25,000 sec-1
SHEAR STRESS	2.9×10^3 - 1.95×10^5 Pa
TEMPERATURE RANGE	40 - 350°C
PRESSURE RANGE	3×10^5 - 3.5×10^7 Pa
MAX PROCESS TEMPERATURE	350°C
MATERIAL GENEOLOGY OUTPUT	Provides full lot traceability of rheological data from start to finish of your process. Data is available real time via HMI (running number or historical trend graph), with ability to export historical data via CSV file
PUMP SPEED RANGE	1 to 60 RPM Brushless Servo motor with resolver feedback
PHYSICAL DIMENSIONS	
VISCOINDICATOR RSU (HxWxD)	20" x 6" x 8" (508mm x 152mm x 203mm)
VISCOINDICATOR IRCU (HxWxD)	24" x 12" x 8" (610mm x 305mm x 203mm)
VISCOINDICATOR HMI SCREEN(LxH)	7" diagonal: 6.2" x 3.5" (157.5mm x 89mm)
ELECTRICAL SPECIFICATIONS	
SYSTEM VOLTAGE	220-240 VAC, single phrase, 50/60 Hz-standard
POWER REQUIREMENTS	1,500W
MAXIMUM DISTANCE FROM iRCU TO RHEOMETER SENSING UNIT (RSU)	Standard cable: 2.5" (up to 100m available). Please note the maximum distance between the HMI and the iRCU is 10 meters
HMI/DISPLAY	NEMA 3 IP20 Enclosure
EXTERNAL CONNECTIONS	
DIGITAL OUTPUT	5kN Load Cell
DIGITAL INPUT	10kN Load Cell

OPTIONAL PROCESS ADAPTERS FOR EASY MOUNTING
ALLOW US TO CUSTOMIZE THE CONNECTION TO A CUSTOMER'S SPECIFIC NEEDS
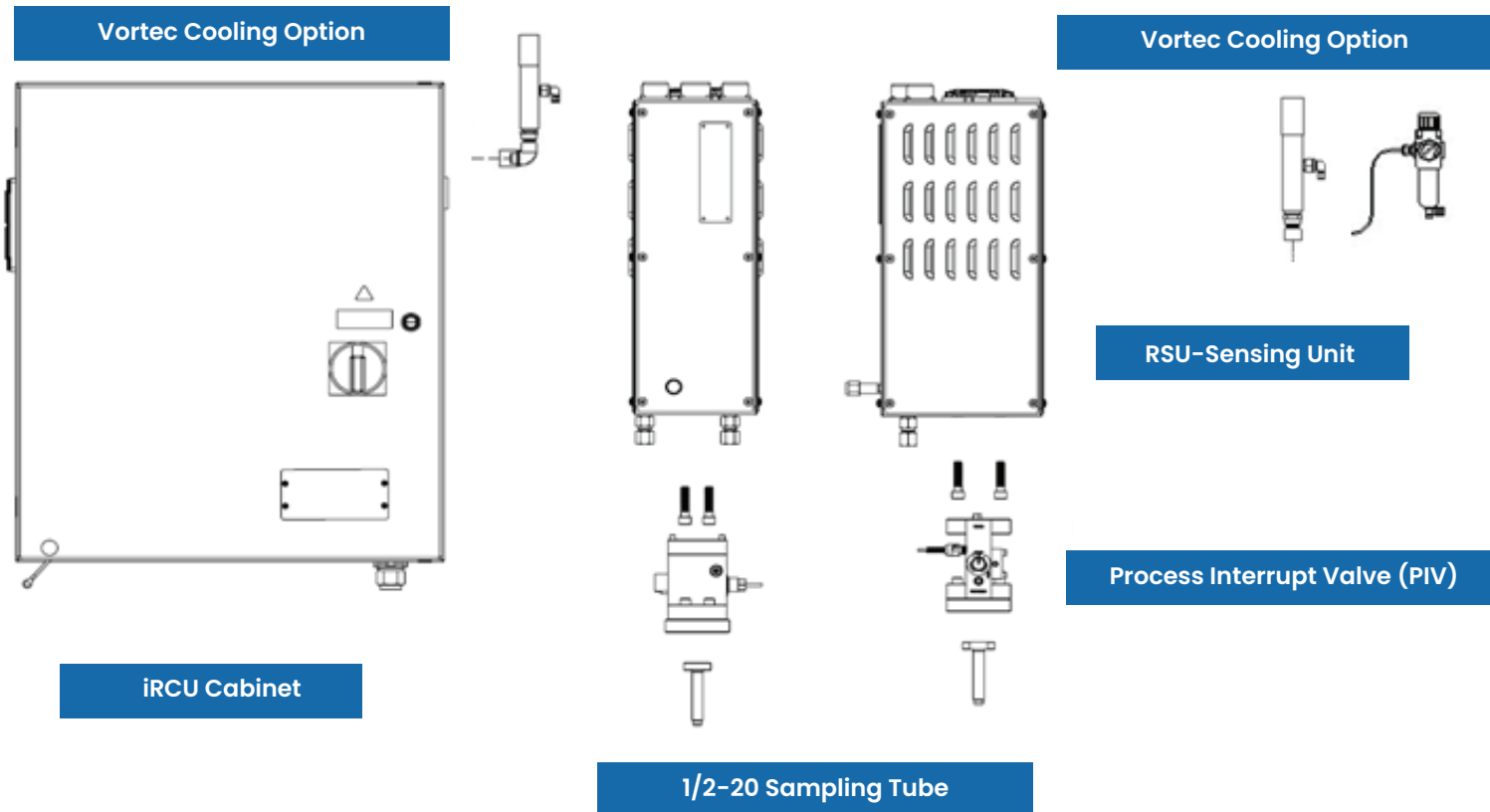

Connection tubes with heating available

Process Interrupt Valves (PIV)

1/2–20 UNF Process Connection

GENERAL SCOPE SYSTEM DIAGRAM

Vortec Cooling Option

Vortec Cooling Option

RSU-Sensing Unit

iRCU Cabinet

Process Interrupt Valve (PIV)

1/2-20 Sampling Tube