Product Specifications

The Thermo Scientific HAAKE PCR 630 is the latest generation of innovative process control technology for online rheological measurements of melt index and viscosity.

Thermo Scientific HAAKE PCR 630

Process Control Rheometer

Applications:
- **Online melt index measurement**
- **Online viscosity measurement**

Materials:
- **Polypropylene (PP)**
- **Polyethylene (LDPE/HDPE/LLDPE)**
- **Polyester (PET)**
- **Ethylen Vinyl Acetate (EVA)**
- **Polymethyl-methacrylate (PMMA)**
- **Polystyrene (PS)**
- **Polyamide / Nylon (PA)**
- **Polycarbonate (PC)**

Applications

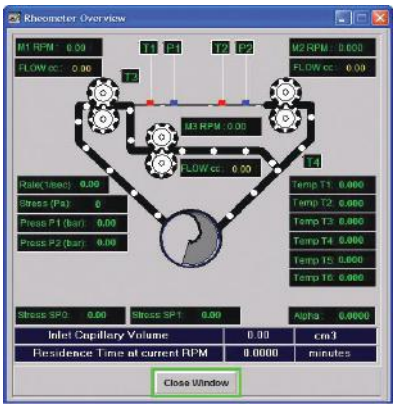
The Thermo Scientific HAAKE PCR 630 (**P**rocess **C**ontrol **R**heometer) measures the melt index at standard ASTM loads and still maintains a minimal lag time which remains almost constant over the melt index measurement range. The slit die pressure-control feature allows the HAAKE PCR 630 to operate at pressures above the process pressure, thereby ensuring operation in the linear region of the transducers and preventing out-gassing.

This also allows to cover a wide melt index range and follow transitions with a single die, eliminating costly and troublesome die changes common to other systems.

The patented 3-pump design makes it possible to measure the viscosity at low shear rates without compromising residence time, this results in a much higher sensitivity when comparing different molecular weight materials. The HAAKE PCR 630 can operate in a variety of modes: melt index mode, transition melt index mode, purge mode, viscosity mode (stress control), and combinations of those. The rheometer can report a synthesized Mooney or Intrinsic Viscosity (IV) value – a mathematical calculation from measured shear viscosity data. For ease of operation, recipes consisting of operating parameters and control values, can be stored for various product grades.

Product Specifications

The HAAKE PCR 630 logs all data and events in a database for trend analysis, SPC reporting and data storage. The HAAKE PCR 630 is a "return to stream" design and is available with a valve block for process isolation and an optical block to allow online spectroscopic analysis (offered as options, additional equipment required). All melts pumps and slit dies are easily exchangeable to adapt the rheometer to specific processes.



Control Features

The HAAKE PCR 630 electronics, based on the SLC-500® PLC from Rockwell International (Allen-Bradley), provides superior support and integration using industry standard components and technologies.

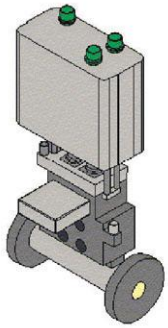
New software features provide capabilities never before available.

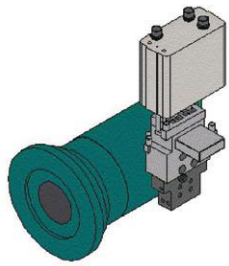
The NEW Process Supervisor for Microsoft® Windows® software, available for the HAAKE PCR 630, offers unmatched ease-of-use and an operator friendly design. The software, based on RSView® 32™, is designed for integration into plant DCS systems. It offers data communication with a variety of protocols like, Data Highway plus®, ModBus® and the latest innovation in process control, OPC (OLE for Process Control). Standard analog signals (4-20 mA or 24 VDC) are also available.

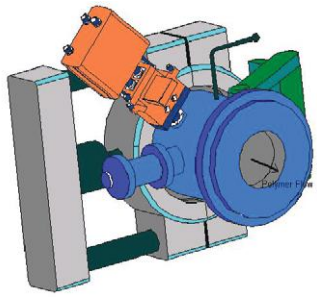
Installation & Maintenance

Installation expertise exists for adaption to extruders from all the major manufacturers. The HAAKE PCR 630 is typically installed on finishing and compounding extruders upstream to a pelletizer or mounted as a side stream with a piping adapter. It can be retrofitted to many existing process systems. It is also interchangeable with existing PCR and MFM installations as an upgrade option. The rheometer is backed by a worldwide, direct support system for service and training of plant personnel. We also provide services to assist with the integration of the HAAKE PCR 630 in plant DCS systems. The HAAKE PCR 630 design concept provides superior ease of maintenance features with its design concept and easy access to all critical components.

The HAAKE PCR 630 can be removed from the process by closing its isolation valves and removing only 2 bolts. The vast majority of maintainable components are standard stock items from major vendors of polymer processing hardware.







Technical Specifications HAAKE PCR 630	
Stress	5 kPa to 250 kPa
ASTM D-1238 loads	0.5 Kg to 25 Kg
Shear Rate	0.03 to 4,000 1/sec
Viscosity	2 to 240,000 Pa.s 20 to 2,400,000 poise
Melt Flow Index	0.02 to 3,000
Temperature	50°C to 350°C (400°C option)
Pumps	Rheometer: 0.584 cc/rev to 1.752 cc/rev Bypass: 1.752 cc/rev to 2.92 cc/rev Max. Speed: 60 rpm
Pressure Transducers	100 bar to 350 bar (1500 psi to 5000 psi)
Slit Dies	Height 0.03 cm to 0.2 cm Width 2.25 cm to 1.2 cm Length 4 cm to 8 cm
EX proof on request	
Power	220 VAC, 30A, single phase, 50/60 Hz
Weight	Rheometer: 115 kg (250 lbs) Electronics: 43 kg (95 lbs)

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