TECHNICAL DATA SHEET

Polytevo Series Filter Pressure Value Tester

Filter pressure value (FPV) tester · EN 13900-5:2005 · 20 mm single-screw extruder · gear melt pump · RT to 360°C · PLC and touch screen



Polytevo Series Filter Pressure Value Tester (ACS-7008FPV) — representative configuration

The Polytevo Series Filter Pressure Value Tester (ACS-7008FPV) is a filter pressure value (FPV) tester with a single-screw extruder, melt pump and test and analysis platform. Image shown for reference; final configuration is confirmed in the quotation.

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SECTION I

Product Overview

Polytevo Series Filter Pressure Value Tester (ACS-7008FPV) is a filter pressure value (FPV) tester that combines a 20 mm single-screw extruder, a gear-type melt pump, a screen pack assembly and melt temperature and pressure sensors, designed with reference to EN 13900-5:2005 for filter pressure value testing to quantify the dispersion quality of pigments and fillers in polyolefin and other thermoplastic compounds.

The ACS-7008FPV plasticizes the test material in the single-screw extruder, and the melt pump forces it at a constant flow rate through a standard fine screen pack. Sensors record the melt pressure before and after the screen as a function of throughput (or time), and the system calculates the filter pressure value (FPV, in bar/g) with reference to EN 13900-5. A higher FPV indicates a greater content of undispersed pigment/filler particles or contaminants, i.e. poorer dispersion. Temperature control, pressure closed-loop control, data acquisition, pressure curves and reports run automatically under the PLC system.

SECTION II

Core Advantages

— **Stable flow, repeatable results** Precision single-screw extruder combined with a gear melt pump delivers a stable flow with minimal pressure fluctuation for excellent repeatability.

— **Seven SSR temperature zones** Seven independent SSR temperature-control zones, up to 360℃, with digital setting and high control accuracy.

— **PLC and touch screen** PLC + touch-screen control system with real-time display of temperature, pressure, speed and flow curves.

— **Automatic test sequence** Temperature control, pressure closed-loop control, data acquisition, pressure curves and reports run automatically under the PLC system.

— **Servo drive with pressure closed loop** Servo drive with pressure closed-loop control for precise adjustment of screw speed and melt flow.

— **Two melt pressure sensors** Two high-accuracy melt pressure sensors (P1 / P2) plus multi-channel temperature acquisition, fully recorded throughout the test.

— **Alarms and data export** Comprehensive fault-alarm function; test data can be exported via USB with automatically generated analysis charts and reports.

— **Dispersion test method** Designed with reference to EN 13900-5:2005 for filter pressure value testing of pigments and fillers in polyolefin and other thermoplastic compounds.

SECTION III

Specifications

Technical data — ACS-7008FPV

Specifications	
Parameter	**Specification**
Brand	Polytevo Series by ACS Material
Product Name	Polytevo Series Filter Pressure Value Tester
Model	ACS-7008FPV
SKU #	ERP7FPV1
Product type	Filter pressure value (FPV) tester
Test method reference	EN 13900-5:2005
Screw diameter	20 mm
Screw L/D	28:1
Screw compression ratio	3:1
Screw material	38CrMoAlA nitrided high-strength alloy steel
Screw speed	0.1–100 rpm rated, servo drive, pressure closed-loop control
Temperature range	Maximum RT to 360℃ (seven SSR temperature control zones)
Heating	7-channel SSR temperature control zones + 3 temperature measurement zones
Melt pressure transducers	P1: 100 bar; P2: 350 bar
Main motor	1500 W servo motor; 20:1 bevel gear reduction
Melt pump	Max. flow 100 cm^3/min; 750 W servo motor
Heating power	Zones 1–3: 2.7 kW; zone 4: 0.9 kW; zone 5: 1.2 kW; zones 6–7: 1 kW

Technical data — ACS-7008FPV (continued)

Specifications	
Parameter	**Specification**
Cooling	4 × ball-bearing cooling fans
Power supply	AC 380 V ±10%, 50/60 Hz, 8200 W
Overall dimensions (L × W × H)	1500 × 530 × 1520 mm
Weight	380 kg

Scope of delivery

— **Standard configuration:** single-screw extrusion system, melt pump, melt pressure sensors (2 sets), PLC control system, test and analysis platform, spare parts / accessories and technical documentation.

— **Scope of supply** — final accessories and scope of supply are confirmed in the quotation.

SECTION IV

Applications

For dispersion quality testing and incoming QC of color, filler and functional masterbatches; formulation evaluation of polyolefin and other thermoplastic compounds; comparative dispersion testing of pigments and fillers; and R&D and quality control laboratories.

Product value: an automatic FPV test system built around a 20 mm single-screw extruder and gear melt pump, with seven SSR temperature zones up to 360℃ and USB data export.

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