TECHNICAL DATA SHEET

Polytevo Series Universal Testing Machine

Servo-controlled electronic universal testing machine · single-column to 100 kN frames · 500 N to 100 kN load cells · 1/500,000 load resolution



Polytevo Series Universal Testing Machine (ACS-8000A) — representative configuration

The Polytevo Series Universal Testing Machine (ACS-8000A) is a servo-controlled electronic universal testing machine series. Image shown for reference; final configuration is confirmed in the quotation.

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SECTION I

Product Overview

Polytevo Series Universal Testing Machine (ACS-8000A) is a servo-controlled electronic universal testing machine series with a single-column frame and 10 kN, 20–50 kN and 100 kN frames, load cells from 500 N to 100 kN, 1/500,000 load resolution and full-digital three-closed-loop control.

The ACS-8000A series is suitable for tensile, compression, bending, shear, tear, peel and penetration tests on a wide range of metallic and non-metallic materials. It also runs automatic control tests at constant load rate, constant deformation rate and constant displacement rate, and supports low-cycle load cycling, deformation cycling and displacement cycling. Measurable properties include elongation, tensile strength, flexural modulus, modulus of elasticity, yield strength, net energy, return energy, total energy and holding force.

SECTION II

Core Advantages

— **Four frame classes** Single-column frame, 10 kN frame, 20 / 30 / 50 kN frame and 100 kN frame, each with one load cell as standard.

— **Three-closed-loop control** DSP + MCU full-digital three-closed-loop control and measurement system.

— **Testing software** Dynamic test curves (force–deformation, force–displacement, displacement–time and stress–strain); automatic calculation of Rm, ReH, ReL, A and E; data export and report printing.

— **Switchable units** Force units kg, lb, N and kN.

— **Servo drive** Servo motor drive with a planetary reducer driving a ball screw: high rigidity, high precision and high transmission efficiency.

— **Automatic control modes** Constant load rate, constant deformation rate and constant displacement rate tests, plus low-cycle load, deformation and displacement cycling.

— **Re-analysis and reports** Graphical processing module for re-analysis and editing after the test; reports can be exported to Excel or printed.

— **Fixtures for many tests** One set of tensile fixtures is supplied as standard; other fixtures are optional for the test requirement.

SECTION III

Specifications

Technical data — ACS-8000A

Specifications	
Parameter	**Specification**
Brand	Polytevo Series by ACS Material
Product Name	Polytevo Series Universal Testing Machine
Model	ACS-8000A
SKU #	ERP7UTM01 to ERP7UTM15 (see load cell options)
Product type	Servo-controlled electronic universal testing machine
Load cell	1 pc standard; capacity per configuration (500 N to 100 kN)
Force unit switching	kg, lb, N, kN
Load resolution	1/500,000
Test force measuring range	0.4%–100% FS
Deformation measuring range	0.2%–100% FS
Force control rate range	0.01–5% FS/s (relative error within ±1% of set value)
Deformation rate range	0.02–5% FS/s (relative error within ±1% of set value)
Constant force / deformation / displacement control range	0.5%–100% FS
Speed accuracy	≤ ±0.3%
Operating environment	Level floor with good ventilation; ambient temperature 0–40°C; relative humidity ≤80%; reliable grounding required
Test method reference	ASTM, DIN, ISO, JIS and BS methods can be configured with matching fixtures

Frame comparison — ACS-8000A

Frame comparison				
Parameter	**Single-column frame**	**10 kN frame**	**20 / 30 / 50 kN frame**	**100 kN frame**
SKU #	ERP7UTM01–05	ERP7UTM06–11	ERP7UTM12–14	ERP7UTM15
Load cell options	500 N / 1 kN / 2 kN / 3 kN / 5 kN	500 N / 1 / 2 / 3 / 5 / 10 kN	20 / 30 / 50 kN	100 kN
Accuracy class	Better than 0.5	0.5	0.5	0.5
Test speed	0.001–1000 mm/min	Confirmed on quotation	0.001–500 mm/min	0.001–500 mm/min
Displacement resolution	0.0001 mm	0.01 mm	0.01 mm	0.01 mm
Max. travel (excluding fixtures)	1000 mm	Confirmed on quotation	960 mm	Confirmed on quotation
Effective width	—	Confirmed on quotation	440 mm	Confirmed on quotation
Dimensions (W × D × H)	520 × 480 × 1600 mm	Confirmed on quotation	950 × 550 × 1960 mm	Confirmed on quotation
Weight	160 kg	Confirmed on quotation	520 kg	Confirmed on quotation
Power supply	AC 220 V, 500 W	Confirmed on quotation	AC 220 V ±10%, 900 W	Confirmed on quotation

Load cell options and SKUs

Load cell options and SKUs	
Parameter	**Specification**
ERP7UTM01 / 02 / 03 / 04 / 05	Single-column frame with a 500 N / 1 kN / 2 kN / 3 kN / 5 kN load cell
ERP7UTM06 / 07 / 08 / 09 / 10 / 11	10 kN frame with a 500 N / 1 kN / 2 kN / 3 kN / 5 kN / 10 kN load cell
ERP7UTM12 / 13 / 14	20 kN / 30 kN / 50 kN configuration
ERP7UTM15	100 kN configuration

Fixtures — Common fixtures

Fixtures	
Accessory	**Description**
Tensile fixtures (standard)	One set supplied as standard.
Compression platens	Optional, for compression tests.
Bending / three-point bending fixture	Optional, for bending tests.
Wire wrap fixture	Optional.
Peel fixture	Optional, for peel tests.
Penetration fixture	Optional, for penetration tests.

Scope of delivery

— **Standard configuration:** main frame, servo motor and drive, planetary reducer, one load cell, tensile fixtures, testing software, data acquisition system, computer, printer, USB drive, cables and documentation.

— **Scope of supply** — the load cell capacity and the frame class are selected on the quotation; other fixtures are optional.

SECTION IV

Applications

For tensile, compression, bending, shear, tear, peel and penetration testing of metallic and non-metallic materials, including plastics.

Product value: four frame classes and load cells from 500 N to 100 kN with three-closed-loop servo control and testing software.

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