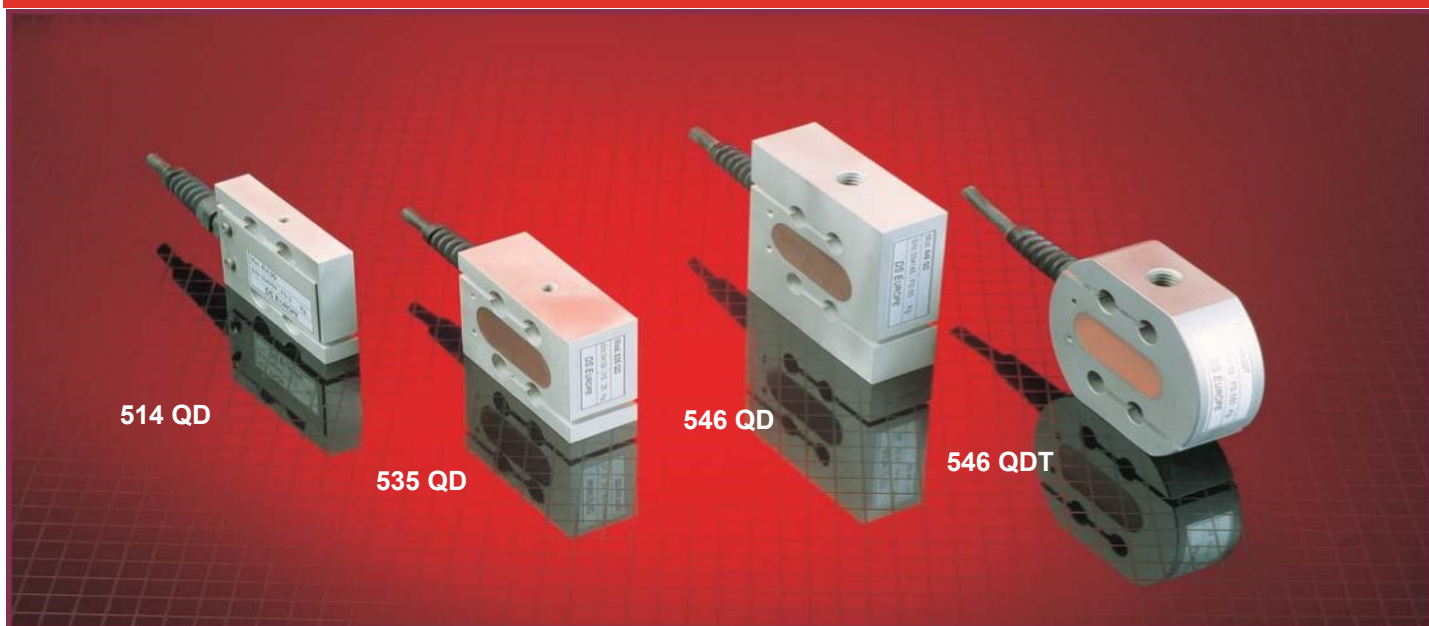


LOAD CELLS SERIES 500 QD



DESCRIPTION

The *Series 500 QD* are load cells for industrial purposes since long time on the market, which have been submitted to several improvements, with full reliability and suitable also for severe environmental conditions.

Different models are available: 514 QD; 535 QD; 546 QD and 546 QDT.

The *main improvements* introduced have been the following: metal alloys with great toughness and quality, internal artifices of design and of layout to support, without damages, dynamic and heavy operation, filling of the internal cavity with water-repellent and high insulating silicon gel and rubber: to withstand also aggressive environment and water condensation.

These load cells are based on a *flexing of a parallelogram*, where the weighing pan moves parallel to itself as in load cells for legal scales. This principle gives an accuracy and an insensitivity to off-centre loads impossible to reach in z-folded load cells, apparently similar to the Series 500 QD, but working with a different principle (shear).

The body of the cell is in aluminium alloy (for models 514-535-546 QD up to 110 Kg) or in high strength steel (for model 546 QDT). For all the models without an internal amplifier, there is an internal calibration. It allows an easy calibration of the weighing system by the Customer. A Final test certificate is provided for each cell.

Series QD load cells have an internal A/D electronics:

Analog electronics (-A): zero (tare) regulation from outside, insensitivity to the cable length and better insensitivity to the external electrical disturbances.

Voltage amplifier: A5=from 10,5 to 28 Vcc with output 0÷5 V; A1=from 18 to 28 Vcc with output 0÷10 V

Current amplifier: A4=from 18 to 40 Vcc with output 4÷20 mA

Digital electronics (-D): all settings are performed by a remote computer: zero (tare) suppression, conversion to mechanical units (Kg, tons, etc.), calibration and operating controls of all the measuring system, alarm (threshold) levels and their hysteresis (CAN), 8 points of customized linearization, up to 32 feasible transducers connected to an only line strongly free from electrical disturbances

Power Supply: from 6 to 28 Vcc; 20 mA typical at 24 Vcc

Digital output: D21=RS485 (Modbus); D41=CAN (CANopen)

A/D converter: 24 bit max

Bandwidth: from 0 to 1,94 Hz, up to 390 Hz (-3dB), depending on A/D update frequency

Baud rate: from 1200 to 115.200 baud (RS485) or 1 Mbit max for CAN

Operating temperature: -20°C ÷ +70°C

TECHNICAL CHARACTERISTICS

Measuring range: 514QD: $0 \div 2-3 \text{ Kg}$ 535QD: $0 \div 6-12-25-50$ (steel) Kg 546QD (aluminium): $0 \div 60-110 \text{ Kg}$

546QDT: $0 \div 220-330-550 \text{ Kg} - 1-2 \text{ Ton}$

Total error: 514QD e 535QD: $< \pm 0,023\% \text{ FS}$

546QD e 546QDT: $< \pm 0,046\% \text{ FS}$

Sensitivity: 2 mV/V FS (typical)

Repeatability error: $< \pm 0,033\% \text{ FS}$

Temperature effect on zero (within 5°K): for 514QD and 535QDT $< \pm 0,023\% \text{ FS}$;

for 546QD and 546QDT: $< \pm 0,046\% \text{ FS}$

Zero unbalance: $< \pm 2\% \text{ FS}$

Bridge impedance: 350 ohm typical

Insulation resistance: $> 5000 \text{ Mohm}$

Recommended excitation: 10 V cc/ca (max 20 V cc/ca)

Safe load limit: 50% over FS

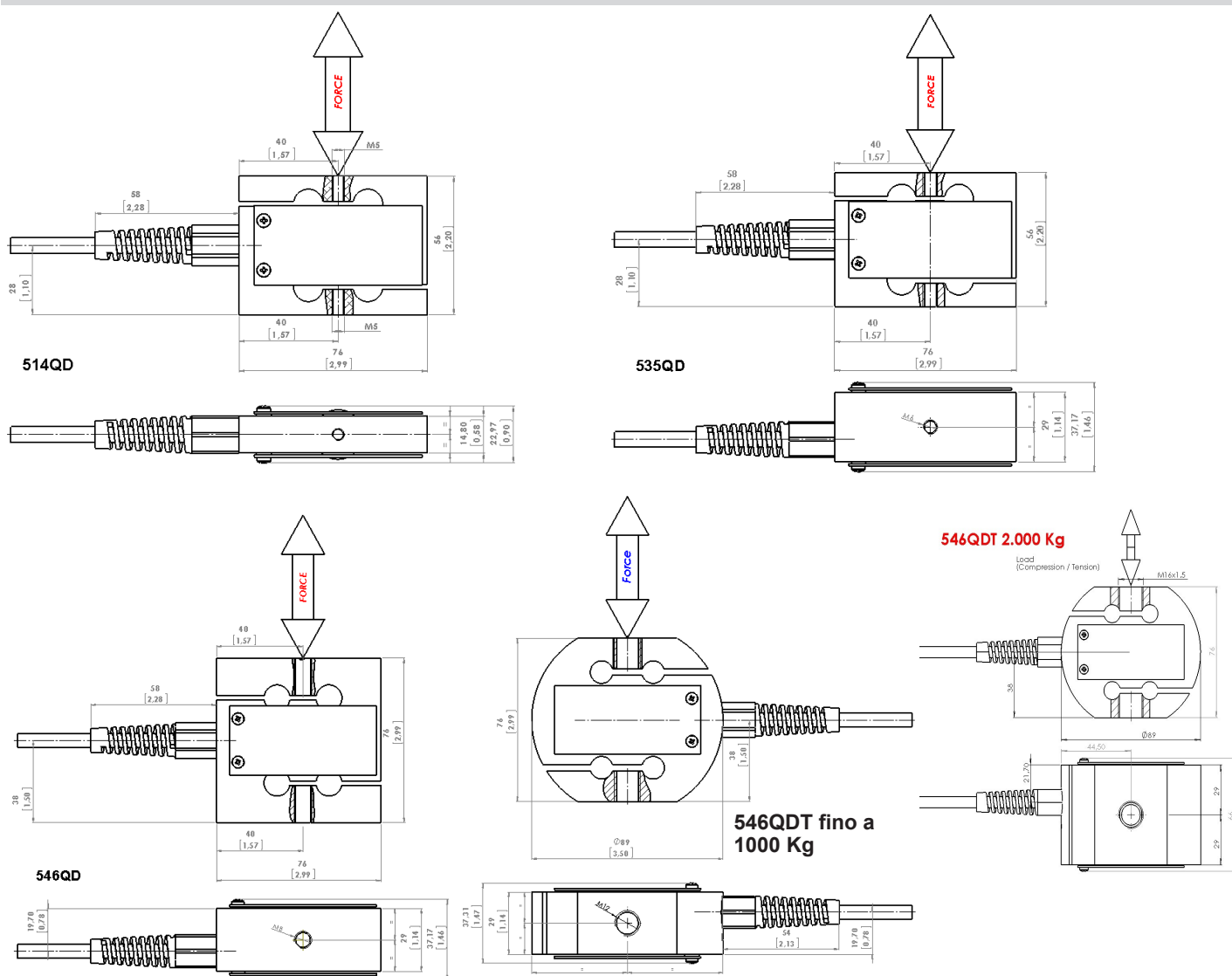
Ultimate load limit: about 3 times FS with load on weighing axis

Compensated temperature (OIML-60): $-10 \div +40^\circ\text{C}$

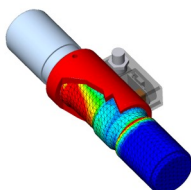
Operating temperature: $-15 \div +75^\circ\text{C}$ Rh $< 95\%$

Environmental protection: IP65 (IP61 for 514QD and 535QD FS 6 Kg)

OVERALL DIMENSIONS



DEVELOPMENT AND MANUFACTURING OF CUSTOM PRODUCTS



S2Tech technical department, with 30 years of experience acquired with DS Europe, can develop products accordingly to customers technical specifications with the following tools

- 3D mechanical design CAD software stations
- Finite element analysis FEA software stations
- Digital and analog electronic development accordingly to EMC (=CE) stricter industrial marking regulations
- Software and embedded firmware development accordingly to most popular industrial bus system (CANopen, Modbus, PROFIBUS)
- Fast prototyping

S2Tech develops new products or modifies existing ones, in order to realize the fittest and more convenient product.