TRANSDUCERS AND MEASURING SYSTEMS FOR INDUSTRIAL AND SCIENTIFIC APPLICATIONS

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S2Tech is an Italian company that designs, produces and sells transducers, instruments and measuring systems for industrial and scientific applications.

Mechanical, technological and electronics know how, together with a long experience of S2Tech team, allow us to evaluate needs of our customers to define the best solution for their applications.

Use of special tools and continuous discussions with technical departments, allow us to develop customized products according to market requests.

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### LOAD CELLS

#### 500QD/QDT universal “S”

**Measuring range FS (tens/comp):**
- 514QD: 0 + 2-3 Kg
- 535QD: 0 + 6-12-25 Kg
- 560QD: 0 + 350-500-1000-2000-3000-4000-5000 Kg

**Total error:** ≤±0.02% FS; ≤±0.046% FS; ≤±0.1% FS (according to the model)

**Available output:**
- Analog: 0-10 V; 4-20 mA (not for 560QDT model)
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** for general use; for industrial static and dynamic applications; for automatic weighing and scales

#### Miniaturized BC3xx

**Measuring range (FS):**
- BC301 (tens/comp): 0 + ±3-6-12-20-30-60 (Al)-100-150 (SS) Kg
- BC302 (comp): 0 + 3-6-12-20-30 (Al)-60-100 (SS) Kg
- BC303 (comp): 0 + 150-350-500 (SS) Kg
- BC304 (comp): 0 + 500-1000-2000 Kg
- BC304K1500 (comp): 0 + 15 kN

**Total error:** ≤±0.5% FS

**Available output:**
- Non-amplified: mV/V

**Applications:** for general use; for industrial weighing platforms

#### AP7xxx Pins

**Measuring range FS (tens/comp):**
- AP7001S: 0 + 250-500 Kg
- AP7010: 0 + 1 Ton
- AP7025: 0 + 25 Ton
- AP7003: 0 + 3 Ton
- AP7050: 0 + 50 Ton
- AP7005: 0 + 5 Ton
- AP7100: 0 + 100 Ton

**Total error:** ≤±0.2% FS

**Available output:**
- Non-amplified: mV/V (from 250 Kg to 5 Ton FS)
- Analog: 0-5 V; 0-10 V; 4-20 mA
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** for mobile or fixed weighing plants, for hooks and cranes

#### HC/RC washer

**Measuring range (FS):**
- HC2001 (Al): 0 + (20)-50-100-200-300 Kg
- HC2001 (Fe): 0 + 500-1000 Kg
- HC2002 (Fe): 0 + 2 Ton
- RC5: 0 + 5 Ton
- RC10: 0 + 10-15 Ton
- RC30: 0 + 30 Ton
- HC7050: 0 + 50 Ton

**Total error:** ≤±0.6% FS

**Available output:**
- Non-amplified: mV/V

**Applications:** for automatic machines, machine tools, presses, power hammers

#### LD/LT low profile

**Measuring range (FS):**
- LD1: 0 + 50-100-200-500-1000 Kg
- LD5: 0 + 1-2-5 Ton
- LD10: 0 + 5-10 Ton
- LD100: 0 + 20-50-100 Ton
- LT05: 0 + ±50-100-200-500 Kg
- LT1: 0 + ±200-500-1000 Kg
- LT5: 0 + ±1-2-3-5-6,5 Ton
- LT50: 0 + ±5-10-20-30-50 Ton

**Total error:** ≤±0.2% FS

**Available output:**
- Non-amplified: mV/V
- Analog: 0-5 V; 0-10 V; 4-20 mA
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** mechanical machines, actuators, weighing systems, reservoirs
**Instrumented pins MD (standard and custom)**

**Measuring range FS (tens/comp):**
- MD4000: 0 ÷ ±1; ±3; ±5; ±10; ±20; ±50; ±100 Ton
- MD5000: 0 ÷ ±1; ±3; ±5; ±10; ±15; ±25; ±40; ±60 Ton

**Total error:** ≤±0.2% FS

**Available output:**
- Non-amplified: mV/V
- Analog: 0-5 V; 0-10 V; 4-20 mA
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** pulleys, cranes, hydraulic actuators, measure of fix and mobile plants, reservoirs

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**PT beam**

**Measuring range (FS):**
- PT500: 0-200-500-1000 Kg

**Total error:** ≤±0.05% FS

**Available output:**
- Non-amplified: mV/V
- Analog: 0-5 V; 0-10 V
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** automation, industrial weighing, test machines, tanks, cranes, winches, lifts, vehicle test machines, medical scales, packaging machines, converting machines, presses, machine tools, marble machines

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**KC cantilever**

**Measuring range (FS):**
- KC2500: 0 ÷ 2500 Kg
- KC6800: 0 ÷ 6800 Kg

**Total error:** ≤±0.2% FS

**Available output:**
- Analog: ±5 V; ±10 V; ±4-20 mA
- Sensitivity: 2 mV/V
- Environmental protection: IP65

**Applications:** automation, industrial weighing, test machines, textile machines, tanks, vehicles, machine tools, packaging machines

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**AP8xxx column**

**Measuring range FS (comp):**
- AP8005: 0 ÷ 5 Ton
- AP8010: 0 ÷ 10 Ton
- AP8025: 0 ÷ 25 Ton
- AP8050: 0 ÷ 50 Ton
- AP8100: 0 ÷ 100 Ton

**Total error:** ≤±0.1% FS

**Available output:**
- Non-amplified: mV/V
- Analog: ±5 V; ±10 V; 4-20 mA
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** weighing systems, load platforms, tanks

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**EG single point**

**Measuring range (FS):**
- 0 ÷ ±3; ±6; ±12; ±25 Kg

**Total error:** ≤±0.03% FS

**Available output:**
- Analog: ±5 V; ±10 V; ±4-20 mA
- Non-linearity: ≤±0.03% FS
- Digital: RS485 (Modbus protocol); CANopen

**Applications:** industrial weighing, automation, test machines, textile machines, medical scales, machine tools, ceramic machines, converting machines, vehicles
**MULTIROPE SENSOR MRL**

Measuring range (FS):
- MRL100: 0 ÷ 4000 Kg
- MRL150: 0 ÷ 4000 Kg
- MRL200: 0 ÷ 2000 Kg

Space for ropes:
- MRL100: 72 mm
- MRL150: 122 mm
- MRL200: 200 mm

Available output:
Non-amplified: mV/V
Digital: CANopen

Type of ropes: wire or plastic ropes, belts

Applications: lifts and elevators, lifting of equipment in theatre setting, for industrial lifting applications, cable cars

**MULTIROPE SENSOR FOR HIGH LOAD MRB HL**

Measuring range (FS):
0 ÷ 7.300-11.000-25.000

Available output:
Non-amplified: mV/V
Digital: RS485 (Modbus protocol); CANopen

Applications: lifts and elevators, Machine Roomless, goods lift freight elevators, lift in the theatrical field, industrial automation, funicular railway, naval applications

**SINGLE ROPE SENSOR SR**

Measuring range (FS):
0 ÷ 450 Kg

Rope diameter: da 6 a 16 mm
Space for the ropes: 10 cm
Type of ropes: wire, plastic and flat
Available output:
Non-amplified: mV/V

Applications: modern traction elevators, civil engineering applications, industrial weighing systems, naval applications
ROPE TENSIONING EQUALIZATION SYSTEM (EQF)

Number and type of ropes: from 1 to 12; plastic ropes
Ropes diameter: 6.5 mm or 8.1 mm
Digital output: USB or Bluetooth

Available functions: individual tensions identified on single rope; indication of the total weight instantly measured; defining of a tolerance band; displaying of up-to-date statistical indicators

Applications: lift, control of tensioning in industrial systems, automation and research field

STRAIN LINK 942 (deformation measurement)

Measuring range FS: 0 ÷ ±500 με (as standard)

Available output:
Non-amplified: mV/V
Digital: CANopen

Available versions:
942 Standard
942 DBCAN: with built-in electronics
962 for a more flexible installation

Applications: metal structure deformation measurement, engine support

UNDERFLOOR SENSOR TSP

Measuring range (FS): 0 ÷ 800 Kg

Available output:
Analog: ±5 V; ±10 V; ±4-20 mA
Digital: RS485 (Modbus protocol); CANopen
Fast and secure installation
Dummy versions available

Applications: load control on new lifts or modernization, load platforms, industrial weighing systems, naval applications

DIGITAL LOAD WEIGHING DEVICE 699Plus

Display: 4 digit LED
Analog output: +5 V; +10 V; 4-20 mA
Digital output: RS485; CANopen
AD converter resolution: up to 20 bit
Power supply: +24 Vcc
Input signal: from 0 to ±19.5 mV; from 0 to ±39 mV differential
Digital I/O input: opto-insulated +12/24 Vcc
Relays: for resistive load from 1 to 24 Vdc/125 Vac

Available functions: easy calibration procedure, chain compensation, relays block function while cabin on movement, relays procedure test and other diagnostic functions

LOAD CELL BC304K1500

Measuring range: 0 ÷ 1500 Kg

Compact dimensions
High reliability
Simple mechanical assembly

With load adapter for load transfer on the sensor
INCLINOMETERS / ACCELEROMETERS

**ES270 biaxial**

- Measuring range (FS):
  - Accelerometer: 0 ÷ ±1700 mg
  - Inclinometer: 0 ÷ ±90°
- Relative accuracy: 0,2% FS (accelerometer); ±0,1° o ±0,25° (inclinometer)
- Available output:
  - Analog: 0-5 V
  - Digital: RS485 (Modbus protocol); CANopen
- Applications: geophysics; control of building structure; odometric measurement systems; naval and military applications

**ES291 digital biaxial**

- Measuring range (FS):
  - Inclinometer: 0 ÷ ±14,5°; ±30°; ±45°
- Relative accuracy: ±0,1°; ±0,25°
- Sensitivity: 0,025°
- Available output:
  - Analog: +5 V; 4-20 mA
  - Digital: RS485 (Modbus protocol); CANopen; PROFIBUS
- Response rate: 50 Hz max
- Applications: industrial machinery, on industrial vehicles, on boats, civil engineering applications, geotechnical applications, inertial platforms etc.

**ES280 accelerometric system**

- Measuring range (FS):
  - ±2,5 g (programmable and common to the 3 axis)
- Measuring resolution: ±0,076 mg/digit
- Non-linearity (Bsl): 2% FS max
- Power supply: 24 VDC (accepted from 12 V to 28 Vdc)
- Output data rate: 100 Hz (up to 1.1 kHz)
- Max shock: 10.000 g (for 2 msec)
- Available output:
  - Digital: RS485 (Modbus); CANopen
- Applications: structural control of towers and trellis

**73xZT TRIAXIAL ACCELEROMETER**

- Measuring range (FS):
  - 730ZT: 0 ÷ ±5000 m/s² (±510 g)
  - 731ZT: 0 ÷ ±450 m/s² (±46 g)
- Sensitivity: 1.0±10%; 10.0±10%
- Response rate: from 0.5 Hz to 20 kHz
- Maximum shock: <30.000 m/s²
- Resonance frequency: <55 kHz
- Applications: test benches; automotive; monitoring on machines with rotating parts

**SUITE OF VIBRATION ANALYSIS**

- Measuring range (FS): 0 ÷ ±6 g
- Sensitivity: 312 mV/g
- Sample rate: 5 kHz
- Type of sensor: MEMS
- Available connection: USB or WiFi
- Available functions: setting of alarms; feedback to the sensor; monitoring, upload and memory of measurements coming from the sensor
INERTIAL MEASURING SYSTEM

Measuring range (FS):
Gyroscope: 0 ± 75°/s; ±150°/s; ±300°/s; ±900°/s
Accelerometer: 0 ± 2 g; ±6 g

Total error: <0.2°/s (gyroscope); ±16 mg (accelerometer)
Available output:
Digital: RS232
Resolution: 0.5%
Power supply: 5-18 Vdc
Applications: autonomous vehicle and ROVs; machine control; precision agriculture; platform stabilization; antenna pointing

DISPLACEMENT AND LEVEL SENSORS

PCS III / PCR III magnetostrictive

Measuring range (FS):
PCS III: from 100 to 3000 mm (in +50 mm steps)
PCR III: from 100 to 3000 mm (in +50 mm steps)

Accuracy: ±0.06 mm (up to 500 mm); ±0.3 mm (from 500 to 3000 mm)
Available output:
Analog: 0-10 V or 10-0 V; 4-20 mA or 0-20 mA
Digital: RS485 (Modbus protocol) as standard; CANopen
Applications: oil&gas; automation; test machines; injection presses

SP LVDT inductive transducers

Measuring range (FS):
0 ± 2.5-5-12.5-25-50-100 mm

Sensitivity: 5-10-20-40-100-200 mV/V/mm
Applications: high accuracy measurement; control on actuators; machine tool; position control of locks of proportional valves

LINEAR/ANGULAR ENCODER

Measuring range (FS):
50 ÷ 12.000 mm

Resolution: up to 1 μm (linear); up to 20.000 impulse (angular)
Rotation speed (angular): 6000 rpm
Translation speed (linear): up to 60 m/min
Applications: on test machines; presses; industrial automation field; oil&gas

CA109 LASER with good price/performance ratio

Measuring range (FS):
CA109A: 0.05 m ± 30 m
CA109B: 0.05 m ± 50 m
CA109C: 0.05 m ± 70 m

Accuracy: ±2 mm
Available output:
Digital: RS485 (Modbus protocol); RS232
Applications: positioning and monitoring of objects; motion detection; level measurement
DD10 LASER high accuracy

Measuring range (FS):
0.005 m ÷ 100 m

Accuracy: ±1 mm
Available output:
Analog: 4–20 mA
Digital: RS485 (Modbus protocol); RS232

Applications: logistics industry; metallurgical industry; definition of liquid level in ovens or other machines; hydrogeological industry

PRESSURE AND TEMPERATURE TRANSDUCERS

STRAIN GAUGE LP650

Measuring range (FS):
0 ÷ 10-20-50-100-200-250-350-500-700 bar

Total error: ≤± 0.5 FS (up to 10 bar); ≤±0.2% FS (from 20 to 700 bar)
Sensitivity: 2 mV/V
Hydraulic connection: 1/4” BSP
Environmental protection: IP65
Available output:
Analog: ±5 V; ±10 V; ±4-20 mA
Digital: RS485 (Modbus protocol); CANopen

Applications: industrial field and difficult environments

CERAMIC LP660

Measuring range (FS):
0 ÷ 5-10-20-50-100-200-400 bar

Total error: ≤±0.3% FS (up to 20 bar); ≤±0.5% FS (from 50 up to 400 bar)
Hydraulic connection: 1/2-UNF; 1/4” BSP
Environmental protection: IP65
Sensitivity: 2 mV/V
Available output:
Analog: ±5 V; ±10 V; ±4-20 mA
Digital: RS485 (Modbus protocol); CANopen

Applications: industrial field and difficult environments

CDA / CDAI pressure MELT

Measuring range (FS):
0 ÷ 100-200-350-500-600-700-1000 bar

Total error: <±0.5% FS
Available output:
Non-amplified: 2 mV/V; 3.33 mV/V
Environmental protection: IP65
Tightening torque: 1/2”-20UNF-2A = 5 Nm M18 x 1.5 = 10 Nm

Applications: measurement of hot fluids pressure in plastic, rubber or medical field

CDTA / CDTAI pressure and temperature

Measuring range (FS):
0 ÷ 100-200-350-500-600-700-1000 bar

Total error: <±0.5% FS
Available output:
Non-amplified: 2 mV/V; 3.33 mV/V
Environmental protection: IP65
Operating temperature: from +30°C to +390°C

Applications: measurement of hot fluids pressure and temperature in plastic, rubber and medical field
OTHER PRESSURE TRANSDUCERS

Available versions:
- **High pressure**: with measuring range up to 6895 bar
- **Low pressure**: with measuring range from 0 to 50 mbar, up to 1000 bar
- Differential
- Flush diaphragm
- For cryogenic applications
- Digital

TFC / TFL temperature

- **Measuring range (FS)**: 0 ÷ 400°C (up to 500°C)
- **Max pressure**: 2000 bar
- **Available output**: Analog: 0-10 V; 4-20 mA
- **Type of sensor**: thermocouple; PT100 sensor
- **Isolation**: 200 Mohm at 100 V (20°C); 2040 Mohm at 100 V (400°C)
- **Applications**: measurement of melted plastic temperature (or other materials)

FORCE AND DEFLECTION SENSORS

**STRAIN LINK X-103**

- **Measuring range (FS)**: 0 ÷ 50-250-360 μm/m
- **Resolution**: 1/5000
- **Linearity**: <0.3% FS
- **Cut frequency**: 1.5 kHz
- **Available output**: Analog: ±10 V; 4-20 mA
- **Applications**: automatic machines (presses, packaging machines); plastic injection machines; monitoring of process parameters; civil engineering

**STRAIN LINK X-109**

- **Measuring range (FS)**: 0 ÷ 50-250-500-775 μm/m
- **Resolution**: <0.1 μm/m
- **Linearity**: <0.3% FS; <0.5% FS
- **Cut frequency**: 2 kHz
- **Available output**: Analog: ±10 V; 4-20 mA
- **Applications**: automatic machines (presses, packaging machines); plastic injection machines; monitoring of process parameters; civil engineering

**STRAIN LINK X-113**

- **Measuring range (FS)**: 0 ÷ 250-360 μm/m
- **Resolution**: 1/5000
- **Linearity**: <0.3% FS
- **Cut frequency**: 1.5 kHz
- **Available output**: Analog: ±10 V; 4-20 mA
- **Applications**: automatic machines (presses, packaging machines); plastic injection machines; monitoring of process parameters; civil engineering
**DISPLAYS**

### DIGITAL LOAD WEIGHING DEVICE 699Plus
- **Display:** 4 digit LED
- **Analog output:** +5 V; +10 V; 4-20 mA
- **Digital output:** RS485; CANopen
- **AD converter resolution:** up to 20 bit
- **Power supply:** +24 Vcc
- **Input signal:** from 0 to ±19,5 mV; from 0 to ±39 mV differential
- **Digital I/O input:** opto-insulated +12/24 Vcc
- **Relays:** for resistive load from 1 to 24 Vdc/125 Vac

**Available functions:** easy calibration procedure, chain compensation, relays block function while cabin in movement, relays procedure test and other diagnostic functions

### MULTICHANNEL DISPLAY PITAGORA
- **Input signal:** from 0 to ±80 mV; +5 V; +10 V; 4-20 mA; 0-20 mA; Start Stop
- **Sample frequency:** max 3,8 kHz/channel
- **Resolution:** max 24 bit
- **Analog output:** +5 V; +10 V; 0-20 mA; 4-20 mA
- **Digital output:** RS485; CANopen; USB
- **Power supply:** 10-35 Vcc; 9-15 Vca
- **Contacts:** 4 opto-insulated to activate software functions
- **Operating temperature:** from 0 to +70°C
- **Setting and calibration:** through buttons on faceplate or digital data transmission

**Available functions:** gross; net; tare; piece counting; positive or negative peak memory; hold; digital filtering; sum of up to 8 transducer signal

### PORTABLE AND VERSATILE DISPLAY TD01
- **Input channel:** up to 8 channels (mV, mA, Ohm)
- **Power supply:** 10-35 Vdc; 9-15 Vac
- **Digital output** (optional)
- **Analog output** (optional)
- **Levels:** 2-8 relays; 4-16 opto-insulated
- **Display:** LCD with 7 digits
- **TEDS function:** for a fast and secure calibration
- **Battery:** with long autonomy

**Available functions:** filtering; zero tracking; tare zeroing; recorder of peak measurement data; amplified analog signal; configurable alarm thresholds; display of measure as graph or histogram

### SINGLE CHANNEL DISPLAY AN401
- **Input signal:** from 0 to ±80 mV; +5 V; +10 V; 4-20 mA; 0-20 mA; Start Stop
- **Sample frequency:** max 3.8 kHz/channel
- **Resolution:** max 24 bit
- **Analog output:** +5 V; +10 V; 0-20 mA; 4-20 mA
- **Digital output:** RS485; CANopen; USB
- **Contacts:** 4 opto-insulated to activate software function
- **Power supply:** from 0 to 10.5÷40 Vcc and from 0 to 9÷28 Vac
- **Operating temperature:** from -20°C to +70°C

**Available function:** gross, net, piece counting, positive or negative peak memory, hold

### PORTABLE SINGLE CHANNEL DISPLAY AN601
- **Input signal:** from 0 to ±80 mV
- **Resolution:** 24 bit
- **Battery:** 4 batteries 1.5 V AA, with 16 hours of autonomy
- **Operating temperature:** from -30°C to +70°C
- **Sample frequency:** from 7.5 Hz to 3840 kHz

**Available function:** calibration with displaying of measure in engineering units; zeroing-hold-peak memory

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**Website:** [www.s2tech.it](http://www.s2tech.it)

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## WIRELESS AND mV/V DISPLAY

Battery: 1 x PP3 9V alkaline; 2 x AA  
Battery lifetime: 60/80 hours  
Operating temperature: from -10°C to +50°C  
Environmental protection: IP65  
Connection: Wireless 2.4 GHz  
Update rate: 3 Hz  
ATEX version available

**Available functions:** overload alarm, maintaining of peak; pre-set tare; measure of peaks and audible alarms

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## FOR TORQUE METERS

**Display:** graphic and illuminated  
**Power supply:** from 15 to 30 Vcc  
**Input:** tension, from 0 to 10 Vcc  
**Relays:** 2 with configurable thresholds  
**Opto-insulated inputs:** 2 for trigger signals  
**FLASH memory card:** to store measurements  
**Environmental protection:** IP40  
**Inside clock:** to store information with time connection  
**Available functions:** displaying of instant value and maximum/minimum; programmable recording of measurements; internal clock to store information; USB interface for connection to PC

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## DATA RECORDERS

### VR24 VIDEO DATALOGGER

**Display:** LCD 7 digits  
**Power supply:** 10-35 Vdc; 9-15 Vac  
**Resolution:** 24 bit  
**Sample frequency:** 40 kHz  
**Input channels:** up to 8  
2 video channels  
Up to 4 analog channels  
**GPS available**

**Available functions:** graphic reproduction and representation of analog channel measures; synchronous acquisition of data; displaying of unit state and memory time

### LX1000 for data acquisition and recording

**Power supply:** from 8 V to 36 V (DC)  
**Available channels:** up to 64  
**Update frequency:** from 1 Hz to 102.4 kHz  
**Recording support:** SDHC/SDXC card (class 10 or more)  
**Maximum recording frequency:** 3.2 Mbyte/s  
**Resolution:** from 16 to 24 bit (selectable)

**Available functions:** remote control via Ethernet through a PC; displaying of values; possibility to integrate up to 4 amplifiers; very accurate recording

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### PORTABLE DATA RECORDER WX7000

**Power supply:** 4 alkaline batteries NiMH AA; USB  
**Available channels:** 16  
**Update frequency:** 20 kHz  
**Accuracy:** ±2%  
**Available output:**  
Analog: ±2.0 V  
Digital: USB

**Available functions:** reliable recording supports; recording up to 128 channels; fast data transfer; remote control software; recording of vocal memo
**DATA LOGGER (IIoT) DYDAQLOG**

- **Sample frequency:** 10 Hz
- **Resolution:** 24 bit
- **Interface:** WLAN/LAN
- **Input channels:** 16 differential
- **Memory:** internal MicroSD

**Available functions:** remote control; functions management through browser; access to collected data in every moment

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**MULTIGATEWAY USR-W630 Serial Ethernet Wi-Fi**

- **Input power supply:** 5-36 V (DC)
- **Digital interface:** RS232, RS485
- **Available ports:** 2 Ethernet ports; 1 WAN; 1 WAN/LAN

**Available functions:** ModbusRTU-ModbusTCP conversion, TCP-Client & TCP-Server connection, VirtualCom, built-in Web Server, DHCP, WiFi mode Access Point and WiFi client

**Applications:** integration on TCP/IP network of devices with one single serial port, both in transparent and Modbus mode; WiFi interface (2.4 GHz 802.11 b/g) for devices with LAN port; integration on SCADA and IoT applications

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**AMPLIFIERS**

**SIGNAL CONDITIONING CARDS**

- **Connectable to strain gauges and LVDT transducers**
- **Operating temperature:** from -40° to +85°C

**Available functions:** amplification of transducers signal and transmission of the signal even in environments with electrical noise

**Available versions:**
- EL600: with 4 through fixing holes
- EL600EA: with plastic box and two plastic glands for connection cables
- EL600DIN: on DIN rail according to DIN EN50022 e EN50035

**Applications:** automation; packaging; dosing; machine tool

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**DIGITAL TRANSMITTER FOR LOAD CELLS**

- **Measuring range (FS):** from -2.6 mV/V to +2.6 mV/V
- **Recommended power supply:** 24 Vdc (±10%, protect against polarity inversion)
- **Linearity:** <0.01% FS
- **Sample frequency:** from 4 Hz to 123 Hz

**Available versions:**
- CANopen - Devicenet
- Ethercat - PROFINET
- Ethernet - PROFIBUS
- Ethernet/IP

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**SIGNAL AMPLIFIER X.201**

- **Sensitivity:** from 0.5 to 1.5 mV/V; from 1.5 to 4.0 mV/V
- **Linearity:** ±0.2% FS
- **Signal type:** analog
- **Environmental protection:** IP65
- **Operating temperature:** from -20°C to +60°C

**Available versions:**
- X.201.IP04: external zeroing signal of measure, suitable for dynamic applications
- X.201.IP03: designed for static applications
Data acquisition DSLAB

**Input channels:** up to 8  
**Resolution:** 24 bit max  
**Sample frequency:** up to 1 kHz  

**Available functions:** measures acquisition from CAN networks on machines and vehicles; linearization of acquired values for each channel  

**Applications:** laboratory measurements; quality control; machines processes control; weighing for long time tests; test of tanks leakage; assembly machines; industrial automation

SW.MWLC wireless multi-cell control

**Input channels:** up to 100  
**Update rate:** 2.4 GHz  
**Free**  
**Operating system:** Windows XP; Windows Vista; Windows 7, 8, 10  

**Available functions:** control and monitoring of up to 100 load cells; control and display of measures; configuration of additional virtual channels; set of system with monitoring of graphic and audible indications; storage of interesting data; web server to display data from portable devices; creation of graphic pages for representation of data in different formats

FOR TORQUE METERS

**Available functions:**  
- Calibration of measuring system (torque meter + display)  
- Calibration of operating parameter of the built-in encoder for measure of angular position and rotational speed  
- Real time display of acquired measures  
- Graphic format representation (Strip Chart)  
- Storage of measures on data files (csv format)

SOFTWARE FOR WIRELESS TRANSMITTERS AND RECEIVERS

**Available functions:** display and recording of up to 100 channels; creation of graphic representation of the system; real-time data read; calculation and display of centre of gravity; built-in web server; set of audible and graphic alarms to indicate passing of a threshold; storage of data in csv format

VR-24 RT View

**Available displays:** 1/2  
**Display update:** single or continuous  
**Available channels:** up to 4 analog channels  
**Average definition:** linear or peak hold  
**Integration time of the digital multimeter:** 0.3/1/3 seconds  

**Available functions:** frequency spectrum; power spectrum; frequency response; density parameters; autocorrelation; cross correlation; spectrogram; digital multimeter for numerical display
APP HHP for Bluetooth load cells

Interface: simple, user-friendly and efficient
Available functions: management of data collection; display of measure in four different engineering units (kN, Ton, Kg, lb); monitoring of peak load; audible alarm for thresholds exceeding; registered data export and possibility to send them to a smartphone or email address
Applications: heavy load; tests and aerial weighing

TORQUE METERS

SERIES 2000
Nominal torque @ FS:
0 ÷ ±2.5; ±5; ±7.5; ±17.5; ±75; ±250; ±500 Nm
Maximum rotational speed: ≤5,000 rpm
Mechanical coupling: 1/2” square, 1/4” square, 3/4” square, 3/8” square, Ø 14 mm, Ø 19 mm, Ø 25 mm, Ø 9 mm
Accuracy: ≤±1% FS
Available output:
Analog: 0-5 V
Applications: test benches; process automation; productive quality test; research and development

SERIES 2300
Nominal torque @ FS:
0 ÷ ±1; ±2.5; ±5; ±10; ±50; ±100 Nm
Maximum rotational speed: ≤10,000 rpm
Mechanical coupling: 1” 3/8 round; 1/4” square; Ø 8; Ø 9; Ø 15
Accuracy: ≤±0.5% FS
Available output:
Analog: 0-10 V; 4-20 mA
Digital: CANopen, USB
Applications: test benches for automotive field; process automation; productive test quality; research and development; medical field

SERIES 3000-4000
Nominal torque @ FS:
0 ÷ ±50; ±100; ±250; ±500; ±1000; ±2000 Nm
Maximum rotational speed: ≤10,000 rpm
Mechanical coupling: 1” square, 3/4” square, 3/8” square, Ø 15 mm, Ø 25 mm, Ø 40 mm
Accuracy: ≤±0.1% FS; ≤±0.2% FS
Available output:
Analog: 0-10 V; 4-20 mA
Applications: test benches for automotive field; process automation; productive test quality; research and development; medical field

SERIES 5000-7000
Nominal torque @ FS:
0 ÷ ±3.000; ±5.000; 10.000; 15.000; 20.000; 25.000 Nm
Maximum rotational speed: ≤8,000 rpm (s. 5000); ≤3.600 rpm (s. 7000)
Mechanical coupling: flange
Accuracy: ≤±0.5% FS
Available output:
Analog: 0-10 V; 4-20 mA
Digital: CANopen; USB (only for series 5000)
Applications: test benches for automotive field; process automation; productive test quality; research and development
FOR PEDELEC

Nominal torque @ FS:
0 ÷ ±200 Nm

Update rate: 250 Hz

Accuracy: ≤±2.5% FS

Available output: analog / digital

Environmental protection: IP66

Mechanical coupling: square

Applications: electric bikes; electrical assisted bicycles

TRANSUCERS FOR HEAVY LOADS

DIGITAL LOAD CELLS

Measuring range (FS):
0 ÷ 5-10-25-50-100-150-300-500-1000 Ton

Total error: <±0.2% FS

Available output:
Analog: ±5 V; ±10 V; 4-20 mA
Digital: CANopen (optional); RS485 (optional)

Operating temperature: from -25°C to +75°C

ATEX version available

Applications: heavy lift; energy; special transports and deliveries; structural weighing

DYNAMOMETERS

Measuring range (FS):
RLP (wireless): 0 ÷ 1-2.5-6.5-12-25-35-55-75-100-150-200-250-300-500 Ton
WLP (without display): 0 ÷ 1-2.5-6.5-12-25-35-55-75-100-150-200-250-300 Ton
LLP (with built-in display): 0 ÷ 1-2.5-5-12-25-35-50-75-100-150-200-250-300 Ton
BLD (Bluetooth version): 0 ÷ 6.5 Ton
SL (for submarine applications): 0 ÷ 6.5-12-25-35-55-85-120 Ton

Available output:
Analog: ±5 V; ±10 V; 4-20 mA
Digital: CANopen (optional); RS485 (optional)

Applications: heavy lift; rope tensioning; test of structural load

TENSIOMETERS

Measuring range (FS):
CS (for electrical wires): 0 ÷ 10 Ton
TIMH (for movable ropes): 0 ÷ 10-25-56-80-150 Ton
COLT (for static ropes): 0 ÷ 5 Ton

Available output:
Analog: ±5 V; ±10 V; 4-20 mA

Applications: heavy lift; tensioning ropes; test of structural load; electrical wires; optical fibre; marine applications; offshore

COMPACT MINI CRANE WEIGHER SCALE

Measuring range (FS):
0 ÷ 100-250-500-1000-2000-5000 Kg

Total error: ±0.1% FS

Power supply: battery (9v PP3)

Environmental protection: IP65

Battery lifetime: up to 80 hours

Available functions: tare; peak hold; alarm signal setting

Applications: weighing; heavy lift
LOADSHACKLES

Measuring range (FS):
0 ÷ 3,25-6,5-12-25-55-85-120-200-300-400 Ton

Total error: ≤±1% FS
Available output:
Digital: Wireless 2.4 GHz; Bluetooth (optional)
Environmental protection: IP67
Batteries: 4 x AA alkaline
Battery lifetime: 1200 hours
Applications: industrial; oil&gas; marine and submarine; building construction; military; heavy lift; weighing

HEAVY LOAD LOADPINS

Measuring range (FS): ±0.5; 1; 2.5; 3.5; 6.5; 15; 25; 50; 100; 250; 500; 750; 1000; 1500 Ton

Total error: ≤±1% FS
Available output:
Analog: 0-5 V (optional); 0-10 V (optional); 4-20 mA (optional)
Digital: CANopen; RS485 (Modbus protocol)
Environmental protection: IP67; IP68 (optional)
ATEX version available
Applications: marine, offshore, oil&gas; brake anchors; bridge support cables; pulleys and sheaves; crane cables; winches

WIRELESS TRANSMITTERS AND RECEIVERS

TRANSMITTERS for analog transducers

Power supply: 8-19 Vdc or batteries (D-AA-AAA)
Bandwidth: 2.4GHz @10mW (802.11.5)
Coverage: 800 m LOS

Versions available for:
Strain gauge transducers
High frequency strain gauge transducers
Potentiometer transducers
0-10 V or 4-20 mA transducers
Temperature transducers
Impulse transducers

Applications: remote data collection and monitoring indoor&outdoor

Bluetooth TRANSMITTERS for strain gauge transducers

Power supply: Batteries (2xAA)
Bandwidth: 2.4GHz @100mW (BLE 4.1)
Coverage: 90 m LOS
Free App: Android & IOS
Mode: point-point, point-multipoint, multipoint

Applications: data display and collection on Smartphone and Tablet

RECEIVERS for analog sensors

Power supply: 9-32 Vdc. USB or batteries
Bandwidth: 2.4GHz @10mW (802.11.5)
Coverage: 800 m LOS

Available in different versions
With USB output
With RS232-485 (Modbus) output
With relays output
With analog output (0-5 V, 0-10 V, 4-20 mA)

Applications: remote data collection and monitoring indoor&outdoor
RECEIVER DISPLAY FOR WIRELESS TRANSMITTERS

Measuring range: up to 800 m
Power supply: from 2.5 to 3.6 Vdc
Radio frequency: 2.4 GHz
Environmental protection: IP67
Operating temperature: from -10°C to +50°C
ATEX version available

Applications: measure detection from wireless or strain gauge transducers

WIRELESS WIND SPEED SENSOR SYSTEM

Accuracy: from 5 to 125 mph
Wireless measuring range: 800 m
Power supply: from 8 to 36 Vdc or internal batteries (2 x D)
Environmental protections: IP67
Operating temperature: from -10°C to +50°C

Applications: constant monitoring of wind speed average

IMPACT and SHOCK RECORDERS

DIGISHOCK

Measuring range: ±25 G; ±100 G
Power supply: 1 battery C lithium ion
Battery lifetime: min 30 days - max 60 days
Sample frequency: 250 Hz
Operating temperature: from -40°C to +60°C
Environmental protection: IP67
Memory: Flash, it records more than 1 million events

Applications: monitoring of fragile goods transport; detection of damages; transport of medical goods and other sensitive materials; control on packaging systems; control of vehicles and movements of goods

SMARTSHIP LIVE

Rechargeable battery: Ion-lithium polymer, rechargeable 3,7V 5,200 mAh
Operating temperature: from -21°C to +60°C
Network: GSM; GPS; SMS

Real-time monitoring of:
- Load position with GPS accuracy
- Packaging condition
- Impacts and possible damages of the load
- Temperature over set thresholds

SERIE M

Measuring range:
0 ÷ 20-30-50-70-100-300 g
Operating temperature: from -29°C to +104°C
Accuracy: ±10% FS

Applications: monitoring of fragile goods; detection of damages; evaluation of products fragility; control of packaging system; control of vehicles and movements of goods; shock measurement system
SHOCK FUSE

Advantages:
- Compact dimensions
- Easy to install
- Better service for the shipper
- Less objections for possible damages

PROTECT A PACK

Advantages:
- Easy to install
- Better service for the shipper
- Less objections for possible damages

The shock indicator can be used only once

TRANS MONITOR IMPACT SWITCH

Measuring range (FS):
20 ÷ 100 g (in increments of 10 g); available also in 15-25-300 g

Accuracy: ±15%
Operating temperature: from -73°C to +68°C
Power cable: 28 Gauge AWG

Available functions: Recording of impact from any angle with high accuracy; only one of the two ball/spring sets must trip to activate the device and close the circuit

Applications: quality control; operational equipment alerts or warning; damage to equipment; equipment misuse

TRANS MONITOR SHOCK INDICATOR

Measuring range (FS):
20 ÷ 100 g (in increments of 10 g); available also in 15-25-300 g

Accuracy: ±15%
Operating temperature: from -73°C to +68°C
Power supply: battery (1.5 V LR44) with lifetime of up to 180 days

Available functions: if impacts of a greater value are imposed, the balls will dislodge from their set position and the clock will freeze to record date and time

Applications: computer/IT services; medical devices and supplies; consumer electronics; industrial equipment; aerospace and defence

OMNI-G / OMNI-GWS SHOCK INDICATOR

Measuring range (FS):
2 ÷ 10 g (in increments of 1 g)
15 ÷ 40 g (in increments of 5 g)
50 ÷ 100 g (in increments of 10 g)
Also available 125-150-175-200-250-300-400-500 g

Accuracy: ±10%
Operating temperature: from -73°C to +135°C
Shock duration: 8.4 ms

Applications: industrial equipment; medical devices and supplies; consumer electronics; building construction
TELEMETRY SYSTEMS

**ROTATING TORSIONAL ACCELERATION MONITORING SYSTEM**

- **Sample frequency:** up to 6500 Hz
- **Maximum error:** <0,25% FS
- **Repeatability:** ±0,05%
- **Available output:**
  - Analog: 0-2 V; 5 V; 10 V; 0-20 mA (optional); 4-20 mA (optional)
- **Applications:** automotive; mechanical and manufactural industry

**LOW POWER DIGITAL TELEMETRY SYSTEM**

- **Sample frequency:** from 400 to 2083 Hz
- **Maximum error:** <0,15% FS
- **Resolution:** 14 bit
- **Available output:**
  - Analog: 0-2 V; 5 V; 10 V; 0-20 mA (optional); 4-20 mA (optional)
- **Power supply:** lithium batteries 3.6 V
- **Battery lifetime:** up to one year
- **Applications:** direct torque measurements on vehicles and machine tool

**INDUCTION POWERED, DIGITAL ROTATING TELEMETRY SYSTEM**

- **Accuracy:** 0,02% FS
- **Maximum error:** <0,15% FS
- **Non-linearity:** ±0,10%
- **Available output:**
  - Analog: 0-2 V; 5 V; 10 V; 0-20 mA (optional); 4-20 mA (optional)
- **Applications:** automotive; aerospace; industrial and manufactural; marine; military; oil&gas; civil engineering

**WIRELESS DIGITAL TORQUE SENSING SYSTEM**

- **Update rate:** up to 6400 samples/sec
- **Resolution:** 14 bit
- **Accuracy:** 0,02% FS
- **Non-linearity:** ±0,05%
- **Available output:**
  - Analog: 0-2, 5, 10 VDC; ±2, ±5, ±10 VDC (4-20 mA Optional)
- **Applications:** automotive; aerospace; aviation; industrial and manufactural

**DIGITAL STEERING EFFORT SENSOR**

- **Sample frequency:** up to 6400 samples/sec
- **Accuracy:** <0,15% FS
- **Non-linearity:** ±0,10%
- **Repeatability:** ±0.025%
- **Available output:**
  - Analog: ±2; ±5; ±10 V
- **Applications:** on vehicles and for test benches

Website: www.s2tech.it
E-mail: info@s2tech.it
## MULTI-CHANNEL, WHEEL-MOUNTED, DIGITAL TELEMETRY SYSTEM

- **Sample frequency:** 1600 samples/sec/channel (4 strain gauge channel); 40 samples/sec/channel (4 thermocouple channel)
- **Resolution:** 14 bit
- **Repeatability:** ±0.025% FS
- **Maximum error:** <0.15% FS
- **Available output:**
  - Analog: ±2 V; ±5 V; ±10 V; 4-20 mA (optional)

**Applications:** to provide data on tire characteristics, suspension systems, brake performance, drive train and more

## LEVEL MEASURING FOR TANKS

### NON INTRUSIVE ULTRASONIC LEVEL GAUGE

- **Measuring range (FS):** 30 m
- **Accuracy:** ≤±1% FS
- **Used technology:** ultrasonic
- **Available output:**
  - Analog: 4-20 mA (2 wires)
  - Digital: RS485 (Modbus protocol); HART protocol

**Applications:** Sewage treatment plants and water purification plants; other environmental engineering facilities; power generating stations

### RADAR LEVEL TRANSMITTER

- **Measuring range (FS):** 100 m
- **Frequency:** 80 GHz
- **Accuracy:** ±1 mm
- **Certifications:** ATEX; SIL
- **Available output:**
  - Analog: 4-20 mA (2 wires)
  - Digital: RS485 (Modbus protocol)

**Applications:** measure liquid level; measure solid level; process tanks; reaction tanks; static tanks; guide tubes; agitator tanks; spherical tanks; horizontal tanks
S2Tech technical department, with 30 years experience acquired with DS Europe, can develop products accordingly to customers 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 (with tests in anechoic room at Competent Body third party laboratory)
- **Software and embedded firmware development** accordingly to most popular industrial bus systems (CANopen, Modbus, PROFIBUS...)
- Fast prototyping

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

**APPLICATION FIELDS**

S2Tech products are suitable for different application fields:

- Food industry
- Industrial automation
- Quality control
- Weighing and dosing
- Presses/ injection moulding machines
- Medical industry
- Building construction
- Naval
- Chemical/Pharmaceutical
- Power plants
- Lift/elevators
- Oil&Gas
- Industrial heavy lift
- Textile industry
- Transports
- Production of machines and transformers
- Military
- Packaging
- Hydraulic
- Geotechnical
Specifications and prices may change without notice due to our continuous work to improve product performances