TRANSDUCERS with DIGITAL ELECTRONICS

OUTPUTS: -D2x = RS 422 and RS 485; -D4x = CAN

Here are explained, in more details, the specifications of the digital electronics internal to the transducers from DS Europe.
The Model of the transducer is followed by a suffix –D (= Digital) and by two numbers defining the operational functions and the implemented communication protocols.

All DS Europe transducers, with internal sufficient space, can be supplied with these electronics.
Some examples: *load cells*: Series 500 QD: full scales from: 6 to 2000 Kg; Series LD: full scales: from 10 Kg to 100 tons; Series LT: full scales: from ±10 Kg to 30 tons; Series AP 7000: full scales: from ±1 to 100 tons; Series MD 5000, etc.
Pressure transducers: with full scales: from 1 to 600 bars.

ELECTRONICS CIRCUITS:

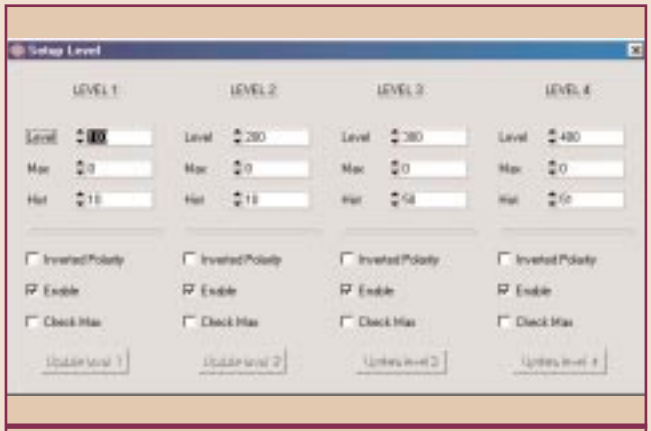
All the digital electronics, internal to the transducer, are built on a multilayer printed circuit with SMD components.
The electronic circuit includes: a 24 bit A/D converter; a 8 bit microcontroller; a 12 bit D/A converter (optional); an EEprom and the drivers for RS 422, RS 485 or CAN.
The A/D converter, of last generation, allows an high resolution, operational flexibility and a large bandwidth.

ADVANTAGES OF THE DIGITAL ELECTRONICS INTERNAL TO THE TRANSDUCERS:

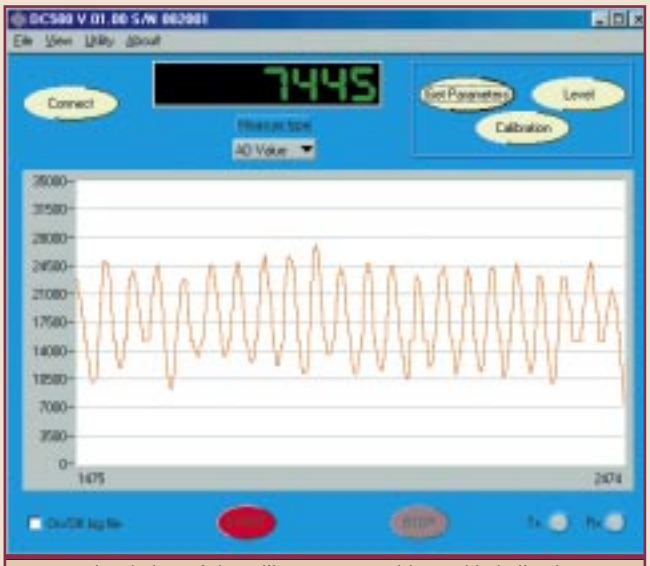
- *Compactness* of the measuring system avoiding the risk of incompatibility when interconnecting several separated units. *Ease* of installation. *Greater insensitivity* to the electrical disturbances. *Lower cost*, on the whole of the measuring system. *Digital outputs* in accordance with the most known electrical and protocol standards.
- *No analog regulation* inside the transducer and, therefore, *simplicity* of installation and of use.
  From a remote computer, by means of a supplied software and of a simple and clear instruction manual, *are set*: the zero, the gain or the tare of the A/D converter, the direct conversion in mechanical units (Kg, bar, etc.), the calibration and the functional test of all the measuring system.
- *Possibility of connection* of up to 32 transducers simultaneously on the same line (RS 485).
  Transmission of the signal on a differential digital line even more immune to the electrical disturbances and overvoltages (CAN).

SOME FUNCTIONAL FEATURES:

- **Alarm levels and hysteresis:** programmable with asynchronous indication, over the network, of alarm status (only with CAN protocols).
- **Standard or customized calibration profile**, having the possibility to activate of up to 8 additional linearization points; to increase the accuracy of the measure with segments of linear interpolation.
- **Analog output** (option): to drive local feed-back or control circuits.
- **Two LED indicators** (for some load cells): to show the internal working status, error conditions, interruption of the data lines, etc.
- **Software** for the configuration and the calibration of the transducer, having the possibility to perform measurements from a remote PC Windows" computer.



Setup window of the four available alarm levels.



Main window of the utility program, with graphic indication of the load cell signal against time.

TECHNICAL SPECIFICATIONS:

- **Supply**: from 6 to 28 Vdc; 20 mA at 24 V typical.
- **Digital outputs**: -D2x = RS 422 and RS 485;
  -D4x = CAN
- **Protocols (x)**: -D20 = DSEbus; -D21 = Modbus
  -D40 = CAN layer 2;
  -D41 = CAN Open DSP 406
  (type: absolute encoder)
  -D42 = Devicenet
- **Bandwidth**: from 0 to1,94 Hz, up to 390 Hz (-3dB), depending on the selected A/D update frequency, with antialiasing filter.
- **Internal A/D update frequency**: from 7,5 to 1920 Hz (available by CAN).
- **A/D Converter**: 24 bit max (Sigma Delta).
- **Baud rate**: from 1200 to 115.200 baud (RS 485/422) or 1 Mbit max for CAN.
- **Analog output** (option): from 0 to 5 V (12 bit D/A).
- **Working temperature**: from -20 to +70°C; Rh <95%.

DIGITAL SIGNAL CONDITIONER Mod. 698

- It includes the digital electronics overlisted, in addition: 4 threshold levels with relays.
- Supply: DC: from 6 to 28V, without polarity obligation.
  AC: from 8 to 35 V.

SERIAL ADAPTER Mod. 658

Self-powered converter, not opto-insulated:
mod. 658-2-y for **RS232/RS422** or
mod. 658-5-y for **RS232/RS485**.
It supports fixed baud rate (y) from 1200 to 115.200 baud.
Converter with automatic control of the data flux.

Technical specifications and prices may change without notice.

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