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WellWatcher UniConn

Multiwell acquisition unit

APPLICATIONS

- Acquisition unit for frequency-shift-keying (FSK) gauges belonging to the family of WellWatcher* permanent monitoring systems
- Wellsite interface for all monitored wells
- Available in an ATEX/IECEx certified explosion-proof assembly

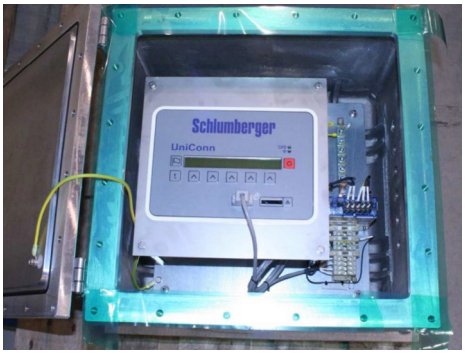
ADVANTAGES

- Real-time monitoring of multiple WellWatcher system gauges per channel
- Notification of downhole faults and undesirable well conditions
- Current and voltage diagnostics and adjustments; cable power-up and power-down capability
- Internal trend memory for pressure, temperature, and diagnostic data
- Wellsite display software for unit configuration, live data viewing, and data downloads
- Onsite and remote data recording ability through Modbus® protocol
- Onboard real-time clock with battery backup that provides data time-stamping
- Coefficient storage
- Availability of NEMA 3R, NEMA 4X, and ATEX versions (ATEX version does not allow internal trending)

The WellWatcher UniConn* multiwell acquisition unit provides a single, common platform for WellWatcher permanent monitoring systems and other well control and data acquisition applications. The unit monitors multiple well and operation data points—the power supply, external analog or digital devices, data measured by the downhole monitoring system, and remote commands.

Alarms can be programmed by the user. System functionality can be added or changed as required by adding as many as four standard expansion cards. It provides two analog and four digital output channels, each individually configurable.

Standard WellWatcher UniConn unit.



Explosion-proof WellWatcher UniConn unit.

Robust certified housing

The WellWatcher UniConn unit can be supplied in an explosion-proof ATEX and IECEx certified enclosure, allowing the unit to be housed in hazardous wellsite locations.

Monitoring and remote access

The unit provides an expandable, versatile platform for acquiring data from WellWatcher permanent monitoring systems using FSK telemetry. It also interfaces with multiple remote communication and control systems using the data for wellsite system protection.

Universal user interface

The WellWatcher UniConn unit's local display and interface provide user-friendly access for data display and parameter set-point adjustment. The back-lit LCD screen has two high-definition, 40-character lines for enhanced data display. Four fixed-function and five multifunction keys facilitate simple control. The display is in plain language, eliminating the need for cross-referenced tables or manuals.

Data trending in real time

The WellWatcher UniConn unit's internal memory maintains a record of up to 500 alarms and events, greatly aiding the troubleshooting process. Data channels can be programmed to individually log at the required frequency or when the deviation exceeds user-defined limits, with the information stored for diagnostic needs.

Communication card

The unit's communication card interfaces it with land- and satellite-based SCADA systems. With four individually configurable expansion card slots, the unit can support up to four independent communication systems simultaneously. The protocol used is standard Modbus over an RS-232 or RS-485 hardware protocol.

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FSK interface card

The FSK interface card provides communication and power for permanent downhole pressure and temperature gauges belonging to the family of WellWatcher permanent monitoring systems. The card can power multiple gauges on the same cable. It acquires both raw data and ready-to-use pressure and temperature engineering values at the surface. The unit can be configured to acquire data from multiple gauges in as many as four wells. The FSK card features an onboard clock to time-stamp data, hence no data can be lost after an unexpected power interruption. Sensor calibration coefficients are stored on the card itself, eliminating the possibility of data entry error.

WellWatcher UniConn Acquisition Unit Specifications	
Box (h × w × d), in [mm]	5.5 × 8.3 × 6.0 [139.7 × 210.8 × 152.4]
Approximate shipping weight, lbm [kg]	8 [3.6]
Faceplate (h × w), in [mm]	7.5 × 10.5 [190.5 x 266.7]
FSK interface card, in [mm]	3.94 × 6.30 [100 x 160]
Power supply	24 V DC ± 2%, 2 A 110–250 V rms, 1 A, both 50 and 60 Hz
Operating temperature range, degC [degF]	–40 to 55 [–40 to 131]
Storage temperature range, degC [degF]	–40 to 75 [–40 to 167]
Digital output (dry contact)	Four channels (100 to 260 V AC rms, 10 to 28 V DC, 3 A max.)
Digital input	Six channels (24-V DC power internally supplied)
Analog output	Two individually configurable 0- to 20-mA current loops
Analog input	Four insulated, double-wire channels (0 to 10 V DC, 0 to 20 mA)
Communication card ports	Modbus RS-485 port (two or four wires) or RS-232; 4,800–57,600 bps
Engineering port	Modbus RS-232 format, 8-N-1[†] port setting, DB9F connector
FSK interface card ports	Primary and secondary gauge connection ports; relay port; Modbus RS-232 format, 8-N-1 port setting, DB9F connector
Qualifications	CE[‡]
Enclosure rating	NEMA 1 (standard version)
Explosion-Proof Enclosure Specifications	
Enclosure (h × w × d) including mounting plats, in [mm]	14.2 × 23.3 × 20.1 [360.0 × 590.0 × 510.0]
Enclosure weight, lbm [kg]	160 [72.6]
Operating temperature range (explosion-proof version), degC [degF]	–20 to 55 [–4 to 131]
Enclosure rating	NEMA 3R NEMA 4X ATEX/IECEx: II 2G Ex d IIB+H2 (for –20 to 55 degC [–4 to 131 degF]) or IIB (for –40 to 55 degC [–40 to 131 degF]), temperature rating T5 (max. surface temperature of 100 degC [212 degF])[§]
Downhole Gauge Interface	
Number of channels	One to four
Number of gauges[††]	Max. of 16 (must not exceed max. output power of card)
Gauges supported[‡‡]	PQG, DPG, NxQG, XPQG
Input signal voltage	70 mV to 3 V rms
Foundation integrated circuit (FIC) max. output current, power	150 mA, 8.25 W
Max. output voltage	59 V open circuit, 55 V at max. output current
Cable voltage status	Short-circuit and open-line detection
Software	
Software	Wellsite display software with unit configuration via PC, including gauge coefficient upload; live data viewing, capture, and trending (with PC connected); internal trend memory data download to PC
Software connection	Through WellWatcher UniConn unit's configuration port, using straight DB-9 serial cable, or through the communication card

[†] 8 data bits, no parity bit, 1 stop bit.
[‡] Conformité Européenne.
[§] IIB is the gas group, IIB+H2 includes hydrogen as well. II is the equipment group—electrical equipment for use in places (other than mines) containing explosive gas. The 2G category, denotes that this equipment is suitable for Zone 1 or higher (ie., Zone 1 and Zone 2); G denotes gas.
[††] Certain gauges may not be compatible with a multigauge configuration.
[‡‡] Power consumption varies with cable length and gauge type; for detailed power consumption information, refer to the product manuals.

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