Distributed intelligent fieldbus units for simplified control

### Technical Data

#### Data concentrator, SattTop STC
- **Power supply**: 24 V DC (20 to 32 V DC)
- **Power consumption**: 5 W (24 V DC)
- **SatBus connector**: Attachable (Canal, France).
- **Serial channel**: Transfer rate 62.5 kbits/s.
- **Power supply**: 24 V DC (20 to 32 V DC)
- **Power consumption**: 5 W (24 V DC)
- **Communication**: 4-pole screw terminal.

#### Operator’s panel, SattTop OP2
- **Display & Keyboard**: 4 x 40 characters, 26 keys.
- **Power supply**: 24 V DC (20 to 32 V DC)
- **Power consumption**: 8 W (24 V DC)
- **Communication**: SattBus connector. Attachable 4-pole screw terminal.
- **SatBus channel**: Transfer rate 62.5 kbits/s.
- **Cable**: Unshielded twisted pair.
- **Temperature**: Operating ±10°C, Storage +25°C to +70°C.
- **Relative humidity**: 10 to 95%, non-condensing.
- **Protection class**: IP 20.

#### Valve Top Unit, SattTop LKT-S
- **Compressed air**: Pressure Max. 1 MPa (10 bar).
- **Oil content**: Max. 0.01 ppm.
- **Dew point**: Min. -40°C below ambient temp.
- **Water content**: Min. 7.5 g/kg air.
- **Connection**: R 1/8” (BSP), ID 6 mm tube.
- **Amplitude**: Max. 2.6 g, 0.52 g rms.
- **Humidity**: Cyclic Operating IP 67.
- **Contact**: PNP span collector max. 100 mA.
- **Position sensors**: Hall element sensors.
- **Signal output**: 0/4 V DC.
- **Supply voltage**: 8–30 V DC.
- **Supply current**: Max. 29 mA.
- **Output**: PNP open collector.
- **Solenoid valves**: Available voltage 24 V DC.
- **Power consumption**: Max. 4 W.
- **Optional function**: Manually operated.
- **Protection**: Not earthed.
- **Materials**: Black plastic parts, Reinforced PA 6, polyamide.
- **Red plastic parts**: POM, polyacetal.
- **Activating stem for VM/EC valve**: Acid-resistant steel AISI 316.
- **Seals for VM/EC valve stem**: EPDM rubber.
- **Other seals**: EPDM, NBR (nitrile), SEB (thermo-plastic elastomer).
- **Electronic parts**: IP67-protected.

#### Valve Top Unit, SattTop VB and SattTop I/O
- **Temperature**: Operating ±10°C, Storage –25°C to +70°C.
- **Relative humidity**: 10 to 95%, non-condensing.
- **Protection class**: Front IP 65 (mounted in panel). Other sides IP 20.

#### SattTop LKT-S, SattTop VB and SattTop I/O
- **Temperature change**: IEC 68-2-14 –25 to +70°C.
- **Vibrations**: IEC 68-2-36
- **Functional test**: Spectra 10–20 Hz, 4.0 x 10−3 g²/Hz, 20–500 Hz, -3 dB/octave.
- **Amplitude**: Max. 0.45 m/s².
- **Transportation**: Spectra Point 1, 1Hz, 60x10−6 g²/Hz; Point 2, 4Hz, 10x10−3 g²/Hz.
- **Amplitude**: Max. 0.5 g.
- **Humidity**: Cyclic Operating IP 67.
- **Protection class**: IP 67.

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**SattTop®**
Distributed control lowers installation and maintenance costs

SattTop is a unique system of distributed fieldbus units for controlling valves, pumps, motors and other digitally controlled objects. Distributed control can help to lower both installation costs and maintenance costs. The SattTop system is based on SattBus, an industrial fieldbus, designed to meet the requirements of the plant floor. SattBus is a token-passing bus.

**Tri-Clover top unit**

Tri-Clover has designed their own module mounted on the actuator. The versatile system is available on a variety of Tri-Clover Series 700 and Series 900 seat valves, and Series B53 butterfly valves.

**Saunders interface**

The Saunders SattTop interface is one of the many variations of the unique remote indication device module used with compact Saunders ‘EC’ and ‘ECX’ actuators ranges for Weir type diaphragm valves.

**LKT-S**

LKT-S is the new control unit for most types of LKM pneumatic process valves, designed in co-operation with LKM. There are different top units for seat and butterfly valves. It features one or two integrated solenoid valve(s) and Hall element feed back sensors and can be easily configured for NO or NC operation.

**SattTop Valve Box**

SattTop Valve Box is a general unit designed for controlling pneumatic process valves. It comprises one or two solenoid valves and inputs for a variety of external sensors.

Combined with an external pneumatic (air/air) valve it provides a unique product for controlling valves in water and waste water applications.

**SattTop Operator Panel**

With its four-line 40 character display, 11 x 2 function keys and its numeric keyboard, the SattTop OP provides functions for start-up, service and manual operation of the system.

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**SattTop PCDoc**

SattTop PCDoc is used for flexible and easy on and off-line configuration of SattTop units using a PC, a software package and a standard SattBus PC card.

It is easy to learn and use, and features automatic back-up of configuration and print-out of documentation.

The configuration can be downloaded to SattTop units directly via the bus cable. PC Doc can be used to simplify procedures during commissioning.

**Self-diagnostics reduce downtime**

All field units designed to protection class IP67 are based on a smart microprocess- sor based electronic unit, SattTop EU, which can be configured for various tasks. Continuously executed selfdiagnostics detect calibration, communications or other internal faults. This helps to reduce downtime and improve safety.

LEDs on the front of the electronic unit, SattTop EU, indicate open and close position of the controlled object. SattTop OP is also an energy saver as only the communicating unit is fully energized. The energy in other units is reduced to as much as 30% of nominal.

**Data Concentrator SattTop STC**

The STC is the link between the host system and the SattTop loop, allowing the host system to read and change the process status.

The STC also initiates the SattBus communication and establishes the token passing and handles the supervision of the communication. An electronic key provides communication protocols to host systems other than ABBs.

**SattTop I/O**

Like the Valve Box, the SattTop I/Os designed for general digital control of pumps, motors and other digital signal units.

The units are available in different versions depending on input voltages.

**SattBus Communication and Power supply**

The industrial medium speed, token-passing SattBus trunk cable is used for communication and power supply. It consists of two unshielded twisted pairs which can be up to 2000 metres in length. One of the pairs carries power to each of the connected units, while the other is used for communication.

Local units are easily hooked up to the trunk cable by means of a IP 67 class T-connector. Connection is independent of polarity.

**A complete system for your control needs**

A smart distributed system

SattTop is made for harsh industrial environments. The operator panel, SattTop OP, acts as data concentrator/ supervisor and operator unit as well as a link between the host control system and the distributed field units. Up to 120 field units can be connected to each fieldbus loop.

Reduced cabling requirements

One trunk cable that covers both supply and communication needs, eliminates the need for costly and complex cabling. Few I/O units are required in a conventional system. Installation is fast and simple. Faulty units can easily be detected and replaced on-line.

There is no need for solenoid cabinets, as solenoids and feedback sensors are integrated in the valve top unit.

Special top units are available for LKM, Tri-Clover and Saunders pneumatic process valves, (companies within the Alfa Laval Group).

**SattTop at your service**

SattTop is a well proven high quality system designed for electronic precision and absolute control. It not only provides the advantage of distributed control of process objects. Fieldbus based SattTop units result in lower costs for I/O equipment and less space than traditional installations. The units are more functional and flexible than traditional devices. You can also reduce wiring and conventional I/O equipment which will result in simplified wiring layout and drawings.

The extensive list of parameters and variables will help you to control your application in an optimal way. Local intelligence provides for accuracy and safety both of which lead to cost-effective production.

SattTop products can be used for all types of digitally controlled process objects in a variety of applications.