



SMARTCON

SCHIEBEL

Smart integrated controls for AB-Series actuators

In the context of the constant advancement of our product range we have with the SMARTCON control stroked the bridge between new technologies, as for example in ours ACTUSMART series applied and traditional solutions of our AB-series actuators and so already proofed with most modern techniques united.

SMARTCON the actuator control operating by means of RISC microprocessor has a high functionality, which is characterised by the possibility of upgrade options which are already integrated, like for example position feedback. Further the connection of the actuator to a field bus system such as PROFIBUS has been enabled. With the option PROFIBUS also a redundant version is possible, as well as the use of a fiber-optic cable.

After the mounting on the valve and a basic set-up all further adjustments are "non intrusive", are possible without opening the actuator.

Both the binary input and the status signals can be parameterised freely and be adapted or assigned so to each existing control system optimally. Also the analysis of the optionally available history data can be read off either directly from the display, over the infrared interface exported or by a field bus connection transmitted and analysed.

The SMARTCON control can be used in combination with every adapted AB-series actuator of SCHIEBEL. The control of the actuator motor is done in the standard version with electrical reversing contactors and based on the classical torque control with in the factory calibrated springs to guarantee the torque monitoring also during starting the motor and so protect the valve optimally.

parameters

Speed and simplicity. All configurable parameters such as speed, torque, warning thresholds, can be set using the sensor switches without any additional tools.

password

To avoid unauthorised access the protection of the system can be done mechanically by using padlocks or electronically with passwords.

smart

A data logger captures and stores operationally event data. Optional it is possible to track data such as historical force profiles for valve analysis and preventive maintenance.

upgrade

Various additional features such as 4-20 mA positioner can be upgraded by simply entering an actuator specific code to improve functionality of the unit.

connection

Plug connector with screw contacts. By using industrial standard plug system crimped and cage clamp contacts are available. 3 metric Cable glands are standard.

phase sequence

Automatic phase sequence control for save installation and start-up.

Infrared

For more efficient set-up of the actuator. Advanced user settings and additional status information are provided via Infrared connection.

Enclosure

The most important factor in reliability of an actuator is protection from the environment. IP67 Standard. IP68 version for harsh conditions available.

double-sealed

Protection of the internal control components even from harsh environmental conditions, which can be encountered during initial commissioning. Standard for EEx-proof version.

I/O

4 input- and 6 output configurable 24V signals, internally or externally supplied. The analog position transmitter is standard in the modulating version. Positioner and PID-positioner are available.

Display

Multi-language graphic display to provide actuator status and valve position. It also provides extensive calibration and diagnostic information.

non-intrusive

Set-up and diagnostics are achieved easily by using the Sensor switches without opening the actuator.

selector switch

Sensor switch without shaft penetrating the housing. To select mode of operation Local/Off/Remote. Padlockable for increased protection.

ambient conditions

The operating temperature range is from -25°C to +70°C. For the EEx-proof version -20° to +40°C. Versions for other ambient conditions are also available.

torque

measuring the output torque by using disc springs enable the actuator to control torque also during start-up of the motor.

LEDs

Visual indicators provide quick and easy communications. Conventional valve status indication as well as diagnostic warnings are provided.

Design

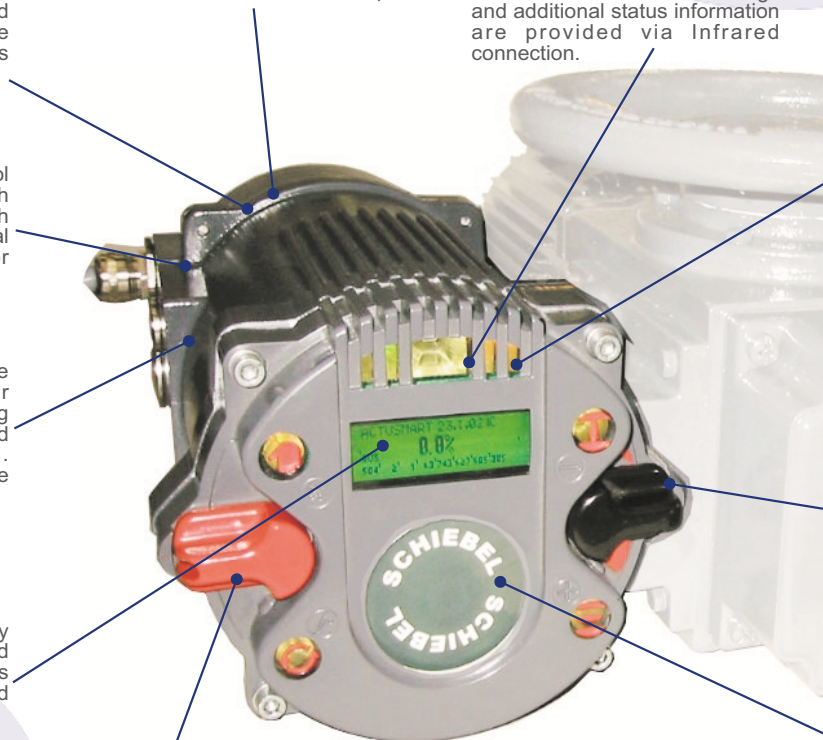
Industrial applications need products designed for robustness and reliability. Switches, display, position indication are flush with the housing to protect against accidental damage.

Operator switch

The GMR-technology of the sensor switches enables the user the benefit of adjustable torques and further settings of the actuator.

Controller

A RISC CPU is used to equip the actuator with the demanded flexibility and monitors the system to increase operating safety. All parameters are stored in an E²-PROM without the need for batteries.





Fieldbus interface (Option):

The control of the actuator is possible via PROFIBUS DP with a data transmission rate of up to 1,5Mbaud. Additionally to the basic option a 2-Channel-Version (redundant) is as well as a fiber-optic cable link (LWL) optional available.

Over the field bus different parameters are read and/or written. All in- and output signals can be communicated over the bus in digital form. The selection of these data (number and the sequence) is freely configurable. If necessary also drive parameters can be modified while the raising or during the operation. Important status messages as well as the value of item can be queried and read by the field bus master.

PROFIBUS DP:

Physical Structure

topology:	line or tree with repeaters
user:	max. 32; 127 with repeater
expansion:	max. 1,2 km (without repeater)
user distance:	acc. conduit length
transmission technique:	RS485 or LWL
transmitting media:	2-wire-verdrillte-abgeschirmte Leitung oder fiber optic cable

Protocol

principle:	Master-Master and Master-Slave
transmission protocol:	Token-Passing and Polling
bus administration:	Single-Master or Multi-Master,
user connection:	automatic
query- / transmission	
auto polling:	cyclical
Transmission rate.:	9,6 kbit/s-1,2 Mbit/s

standard version

in combination with actuator	Type	AB3	AB5	AB8	AB18	AB40
adjustable switch-off torque ^{1) 2)}	max. Nm	30	60	120	250	500
	min. Nm	10	20	40	85	170
modulating torque (for rAB)	max. Nm	15	30	80	180	370

other data according technical data sheets of AB-series

Power Supply	3x400V 50/60Hz or 230V 50Hz (according power supply of electric actuator)
Electrical connection	6+24 pole plug with screwed contacts ³⁾
Electronic control	RISC prozessor control
display	illuminated, multi-lingual, graphic LCD
Indication lights	4 LED indicators: Open (running) - Closed (running) - Ready - Warning
operating interface	illuminated symbols Selector Sensor Switch: Local - OFF - Remote (padlockable) Operator Sensor Switch: Open - Stop - Close
languages	German, English, Spain, Czech
Communication	Infrared port
Binary input signals	Open - Stop - Closed - Option 1 - Option 2 (configurable)
Nominal voltage	24V DC; bipolar
potential separation	Opto couplers
Status signals	6 configurable 24V signals; separated by opto couplers
Breaking capacity	24V DC max. 100 mA
wiring diagram (standard)	SC 131.002 Lfd.Nr.: 2
Enclosure protection	Standard IP 67 ⁴⁾ , non-intrusive
accord. EN 60 529	Option IP68 ⁴⁾ , double-sealed ⁵⁾
Ambient temperature	-25°C to +70°C ⁶⁾
painting	RAL 7030; K2
Signal board (Option)	3 input signals; 90 - 265V; separated by opto couplers,
capacity	max. 2A, 250V AC
Analogue feedback signal (Option)	0/4-20mA feedback
positioner (Option)	4-20mA input signal
Profibus (Option)	acc. EN 50170 PROFIBUS DP 1,5Mbaud
EEx-proof (Option)	acc. EN 50014 ff EExdellCT4

1) Non-Intrusive adjustment by Sensor-Switches.

2) Standard Factory Setting of Switch off torque is minimum adjustable

3) Industrial Standard plug; optional with crimping connection or cage clamp; EEx version: 26-poles terminal strip

4) IP 67: Protection against short-time immersion in water (max. 1m for 30min.); IP68: submersible (max. 5m for up to 72Std.);

5) Control components are never exposed to the elements during site wiring or because of faulty cable connection; Standard for EEx-proof version and Fail-Safe version.

6) Ambient temperature for EEx proof version accord. TÜV definitions: -25° to +40°C

subject to change without prior notice.