

sdtork[®]

The Complete Solution in Valve Automation
An ISO 9001:2008 Certified Company

Actuator Controls

SD-IS-01
SD-MOD-01



YES. WE CARE...

| Courteously | Attentively | Respectably | Effectively |



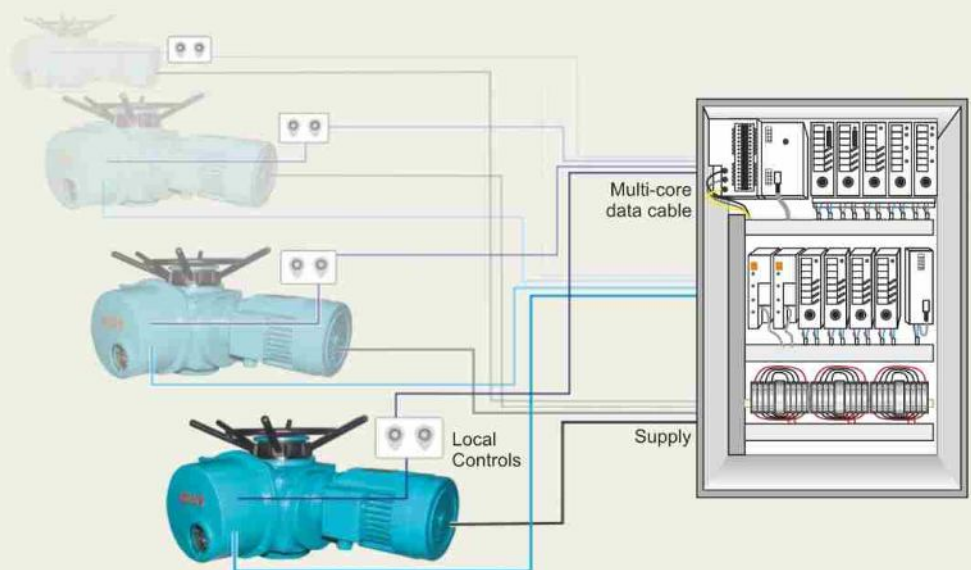
Actuator Controls

Advantages of Integral Motor Control over Traditional Control

External Controls

For the connection of external control of the actuator the following points must be considered:

- All actuator signals e.g. limit, torque and thermo switch signals must be passed on to the external controls in the control cabinet
- The control of the actuators via a reversing contactor combination has to be implemented and installed in the control cabinet
- The local controls have to be implemented and mounted
- Depending on the valve type, the signals have to be processed differently (torque/ limit seating)



Integral controls

Actuators with integral controls are supplied ready for use with local controls, operating and switching elements. The direct processing of the actuator signals on site enables the transfer of simple process control functions to the field level.

Further advantages

- No extensive wiring in the control cabinet is required
- Reliable and correct processing of the actuator signals.
- Actuator and controls are optimally adapted to each other
- Standard wiring diagrams are available
- Warranty for both actuators and controls.

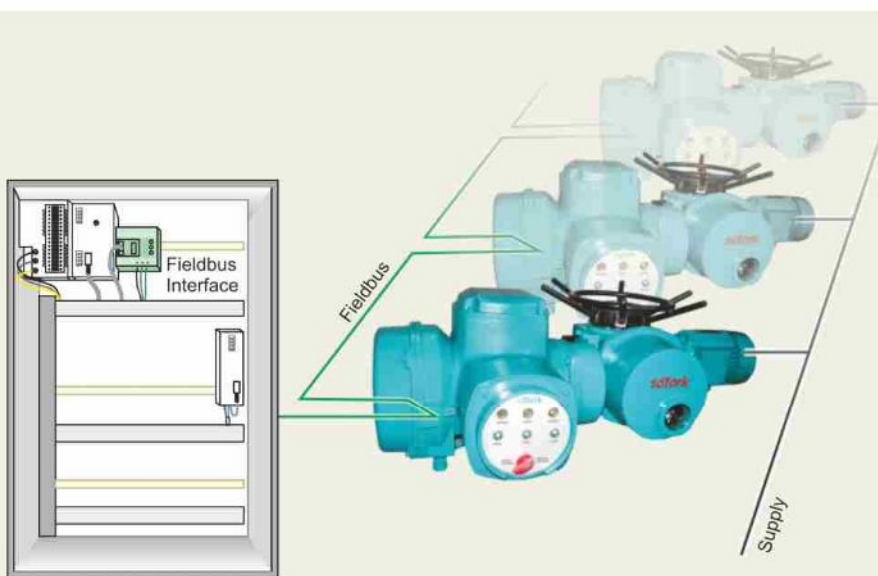
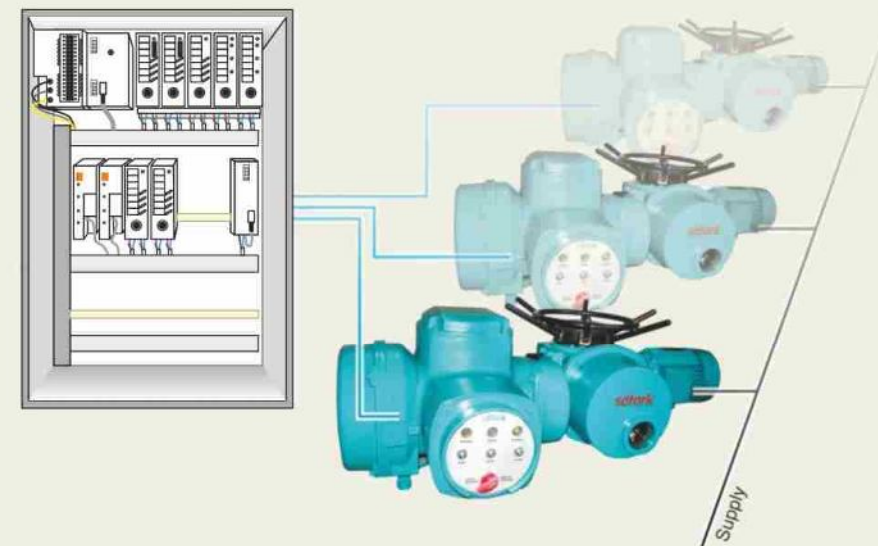
Fieldbus

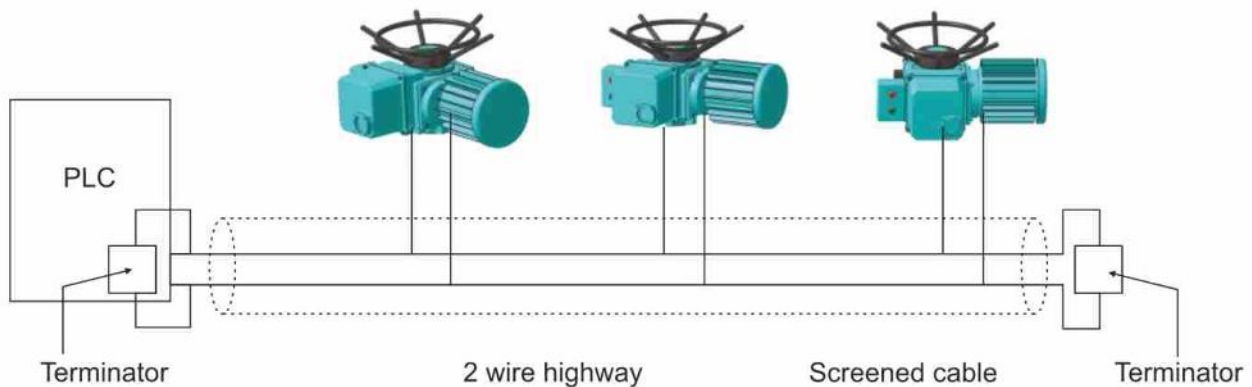
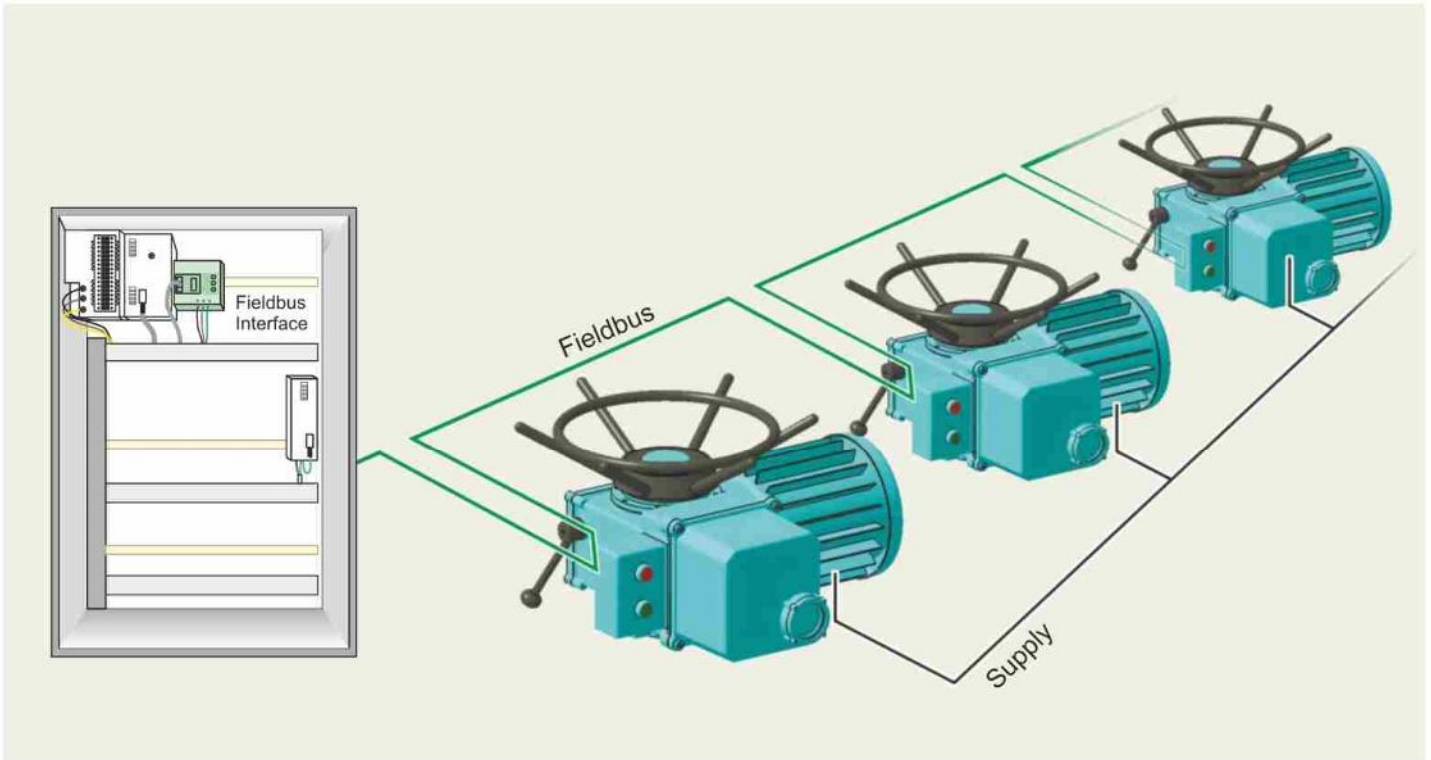
All the actuator controls are integrated in a fieldbus system, then the installation costs are further reduced. The commands and signals of all actuators are transmitted to and from the higher level controls via a two-wire cable.

The space consuming input/output components for the control or feedback signals of the actuators as well as their associated control cabinet sections are no longer required.

Further advantages

- Easy configuration
- Quick and easy commissioning
- Easy to understand documentation
- Good extension possibilities





On field implementation of the actuator using two wire modbus protocol

Two wire MODBUS communication has two benefits :

- Lower investments
- Lower operational/maintenance costs

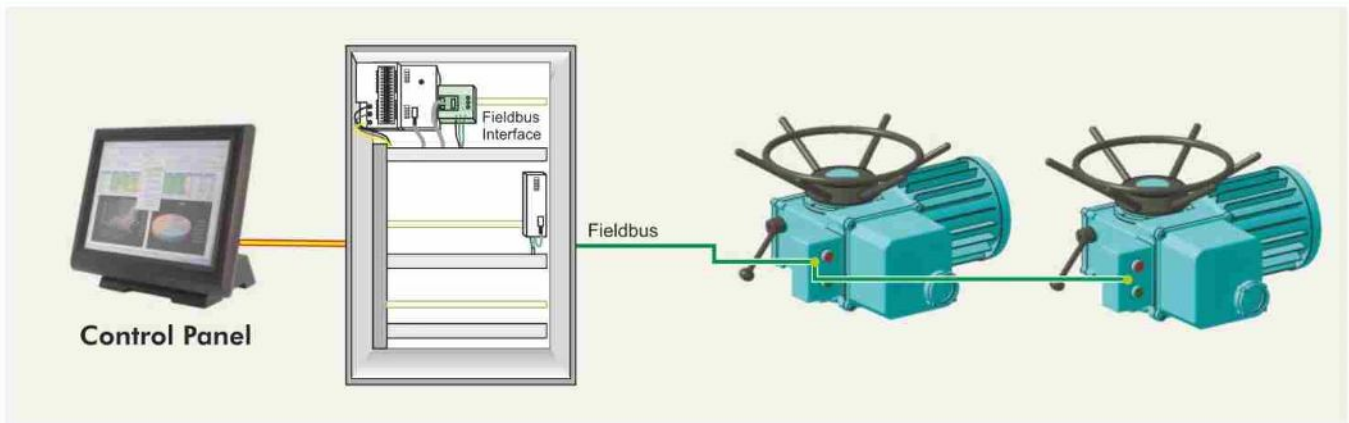
Lower investments :

1. Two wire MODBUS in the actuator ensures that multiple actuators of SD-MOD-01 model can be connected by a single data line, thereby eliminating the need for many signal cables so that only two cables are needed – one for Modbus and one for power.
2. Furthermore, the system is less complex, needing only one central controller to program and control a string.
3. By controlling all actuators from a central point it is possible to save the cost of interface panel.
4. The Modbus protocol is designed as per the standard MODBUS protocol, ensuring that you can interface with your existing SCADA software with minor changes.
5. Time required for installations is considerably lower due to reduction in cabling and interfacing boxes.
6. Ready to use actuator. Connect power, MODBUS cable and ready to use.

Lower operational/maintenance costs :

1. MODBUS communication reduces the resources needed for operation and maintenance.
2. Due to a standard communication protocol it is easier to program your applications and it takes less time to install MODBUS.
3. High enclosure protection ensures longer life of the overall system.
4. Remote monitoring of a large installation is very simple because of the automation and hence the staff requirements are also significantly lower.

Interfaces



Control signals for the actuators.

Control Signal :

Open	A digital command to cause the actuator to open to the fully open position as indicated by the Open limit switch. Under correct operation the actuator stops either when the open limit switch is reached, when the torque exceeds the value set and the open limit switch has been reached, or a new command is sent over the network.
Close	A digital command to cause the actuator to close to the fully closed position as indicated by the Close limit switch. Under correct operation the actuator stops either when the close limit switch is reached, when the torque exceeds the value set and the close limit switch has been reached, or a new command is sent over the network.
Stop	With no other command present this digital command causes an actuator motor that is running to stop.

Feedback Signal :

Single phase	Single phasing has occurred
Manual mode	The actuator is in manual mode by selector
Travel limit switch Open	The status of actuator indicating open position.
Travel limit switch Close	The status of actuator indicating close position.
Torque limit switch Open	This signal indicates torque overload has occurred in open position.
Torque limit switch Close	This signal indicates torque overload has occurred in close position.
Angle 4-20mA	The current corresponds to the angular position of the valve.
Emergency stop	The emergency stop button has been activated.

Completely configurable settings :

All the configurable parameters required for the MODBUS communication can be configured on the field through a computer / laptop.

All the parameter registers have factory default setting designed to meet the most common requirements for the actuator. If these are not suitable for a particular application then by using a MODBUS communication tool these values can be changed.

In most applications the majority of the default settings in the MODBUS Module will be suitable for the operation of the valve and need not be altered. However, in every case it will be necessary to alter the address since the default should never be used within a live system



Technical Specifications may change without prior notification. Actual system may differ from the images shown in this manual.

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