

Product data sheet

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Date: July, 2012

FieldQ

FieldQ "fully integrated" actuator and control modules

General Overview

Description

The FieldQ package consists of an actuator with one or two modules, which form an integrated concept for "On/Off" valve automation. These components are:

1 Basic actuators

The basic actuator supplies the torque, required to open and close valves and is available in various sizes (rated 47 to 1676Nm at 5.5barg or 413 to 14874 In.lb. at 80psig). Double acting and spring return executions are available. The spring return execution can be equipped with multiple spring sets to cover a pressure range from 2 to 8 barg (30 to 120 psig).

2 Pneumatic Modules

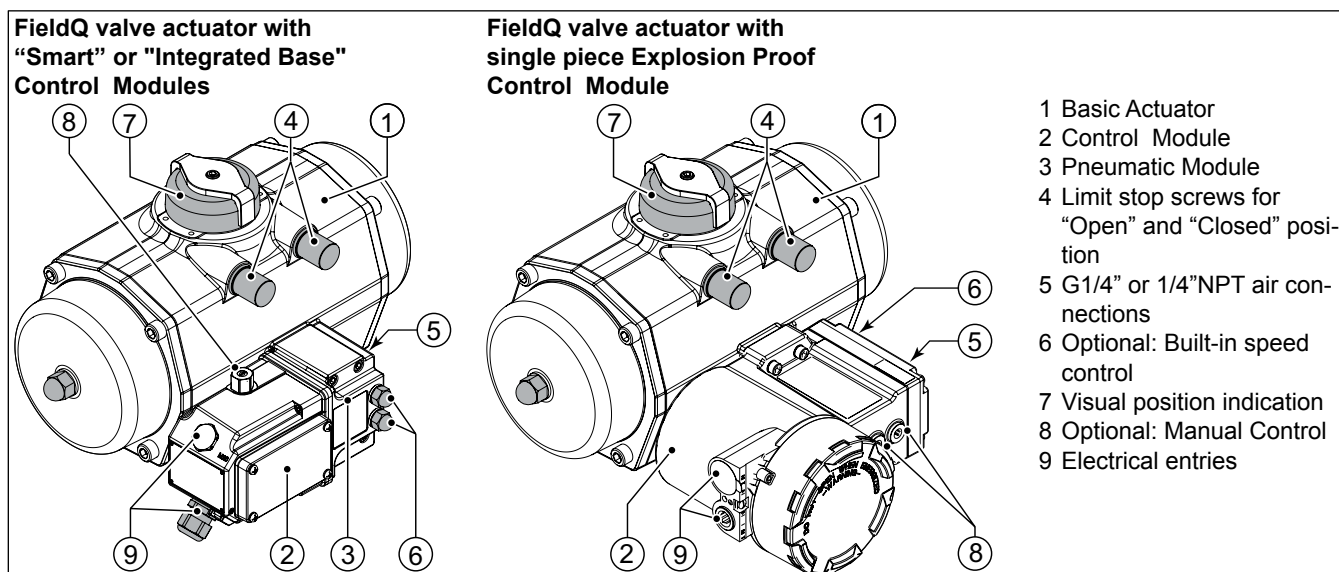
The Pneumatic Module is the pneumatic interface between the basic actuator and the Control Module. It contains a booster block which is controlled by a pilot valve in the Control Module. Optionally, the Pneumatic Module can be equipped with integrated Speed Control throttles.

Note: "Smart", "Integrated Base" and "Bus communication" Control Modules require a separate pneumatic module.

3 Control Modules

The Control Modules contain the terminal connections for control and feedback signals, the pilot valve for directly controlling the Pneumatic Module and indirectly controlling the basic actuator. Three ranges of control modules are available:

1. **"Smart" Control Modules:** These processor based modules have additional electronics and a button board. This button board enables start of the auto-initialization procedure, which automatically sets the feedback switch points for the actuator's position limits. Included in this range of "Smart" Control Modules are the modules with bus communication protocols like **Foundation Fieldbus™, DeviceNet and ASI.**
2. **The "Integrated Base" Control Modules** are conventionally wired control modules which include a pilot valve and switches for control and position feedback.
3. **The "XP" control modules** are the newest range with further integration to comply with the Explosion proof (XP) or Flame proof (Ex d) protection methods as required by FM, CSA, ATEX or IECEx. These XP Control Modules are conventionally wired control modules which include **easily exchangeable switch and pilot valve cartridges**, all integrated into one single housing. A new optional feature of the XP control modules is the **Fail In Last Position control function** for double acting actuators.



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Actuator specifications:

Construction

- Ingress protection rated IP65 / NEMA4X and suitable for indoor and outdoor installation.

Finish

- Housing: Anodized with a polyester non-TGIC based powder coating
- Pistons: Chromate treatment.
- Pinion: Hard anodized


Lubrication

- Factory lubricated for the normal life of the actuator.

Temperature

- Depends on the Control Module used. See applicable data sheets 1.604.xxx.

European Directives

- The basic actuator complies to PED 97/23/EC, Machinery Directive 2006/42/EC and to ATEX 94/9/EC and is marked:
 II 2 GD c IIC TX

Pressure

- Double acting: 2 to 8 bar / 30 to 120 psi
- Spring return
 - with maximum spring set: 6 to 8 bar / 87 to 120 psi
 - with reduced spring set: 3 to 8 bar / 43 to 120 psi

Operating media

- Dry air or inert gasses, filtered to 50 microns.
- The following Control Modules require air filtered to 5 microns: QC03, QC04 and QC34 (see applicable data sheets 1.604.xx).
- Dew point 10K below operating temperature. For subzero applications take appropriate measures to protect the installation.

Torque

- 40 to 1600 Nm. (300 to 11000 lbf.in) See sheets 1.602.01, 1.602.02 or 1.602.03.

Rotation

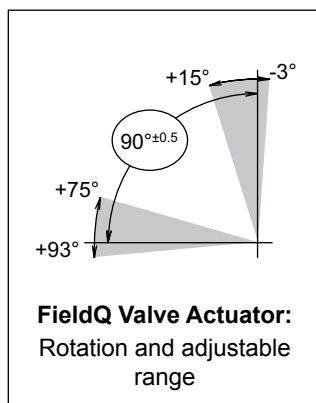
- Factory set at $90^{\circ} \pm 0.5^{\circ}$. Adjustable range: -3° to $+15^{\circ}$ and $+75^{\circ}$ to 93°
- Clockwise fail-to-close action, see sheet 1.606.04 for optional fail-to-open action (assembly codes).
- See 1.606.03 for other double acting assembly codes.
- For more info on failure modes see 1.606.02

Cycle life

- 500.000 cycles minimum

NAMUR plate

The top flange of the FieldQ actuator is equipped with a NAMUR (VDE/VDI 3845) drilling pattern. The addition of a NAMUR plate makes the FieldQ actuator suitable for mounting all kinds of NAMUR compatible control accessories like solenoids. For more info on NAMUR plate, see sheet 1.605.03.



Actuator data		Q40	Q65	Q100	Q150	Q200	Q350	Q600	Q950	Q1600	
Bore	mm.	70	80	91	103	110	145	175	200	230	
	inch	2,76	3,15	3,58	4,06	4,33	5,71	6,89	7,87	9,06	
Stroke	mm.	18,8	22,0	25,1	31,4	37,7	37,7	44,0	50,3	62,8	
	inch	0,74	0,87	0,99	1,24	1,48	1,48	1,73	1,98	2,47	
Weight:	Double acting	kg.	1,8	2,4	3,1	4,5	5,8	10,4	19	26	43
		lb.	4,0	5,3	6,8	9,8	13	23	43	58	94
	Spring return	kg.	2,4	3,6	4,6	6,9	9,1	17	28	39	66
		lb.	5,3	7,9	10	15,1	20	37	61	85	145
Operating time		sec.	0,7	1,1	1,2	1,8	2,3	3,6	4,5	6,9	
Air consumption per stroke											
at 1 atm (litres)	Central air chamber	0,16	0,33	0,35	0,84	0,8	1,8	2,9	4,7	7,3	
	Endcap air chambers	0,22	0,36	0,49	0,78	1	1,9	3,1	4,9	8,0	
at 1 atm (cu. in.)	Central air chamber	10	20	21	51	49	110	177	287	445	
	Endcap air chambers	13	22	30	48	61	116	189	299	488	



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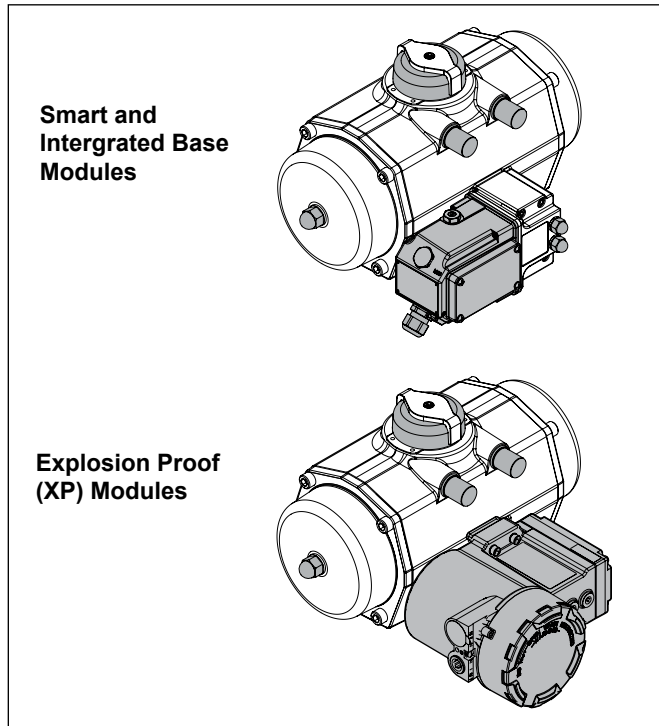
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Control Modules



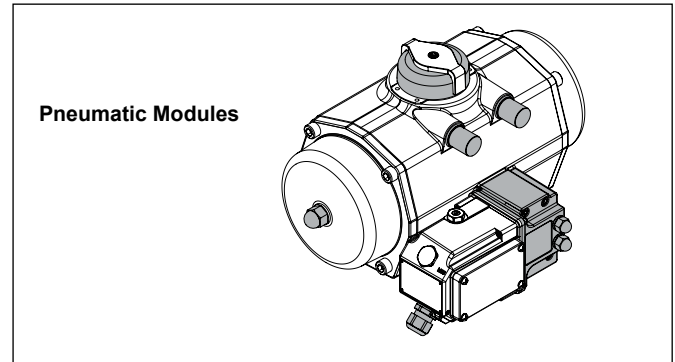
The following version of Control modules are available:

	Sheet nr.
Smart modules	
- QC01 24VDC,	1.604.01
- QC02 85-254VAC	1.604.01
- QC03 Intrinsically safe	1.604.011
- QC04 Intrinsically safe with NAMUR feedback	1.604.011
Bus communication modules	
- QC30 AS-Interface	1.604.04
- QC31 DeviceNet	1.604.09
- QC34 Foundation™ Fieldbus	1.604.02
Integrated Base modules	
- QC11 24VDC	1.604.06
- QC12 115VAC	1.604.06
- QC13 230VAC	1.604.06
- QC14 Intrinsically safe	1.604.07
Explosion proof (XP) Control modules	
- QC41 24VDC	1.604.10
- QC42 115VAC	1.604.10
- QC43 230VAC	1.604.10

Options

Manual Control, IECEx, ATEX, FM or CSA approvals, glands, plugs and connector plugs.

Pneumatic Modules



- “Smart”, “Integrated Base” and “Bus communication” Control Modules require a separate pneumatic module.
- “Explosion proof” Control Modules have a build-in pneumatic booster block and do not require a separate pneumatic module.

Functions :

Double or Single Acting (spring return)
Fail-in-Last position (Only on XP control modules)

Actuator range :

Suitable for Q40 to Q1600 (see note below).

Enclosure :

IP65 / NEMA4X

Pneumatic connections:

G1/4” or 1/4”NPT

“Breather” function:

Standard for single acting actuators

Options :

Speed control, exhaust port filters or silencers.

Technical specifications

See sheets 1.605.xx



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