

Product data sheet

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Date: December, 2006

FieldQ

Smart - Control Modules

QC03: IS, QC04: IS-NAMUR, Intrinsically safe

Description:

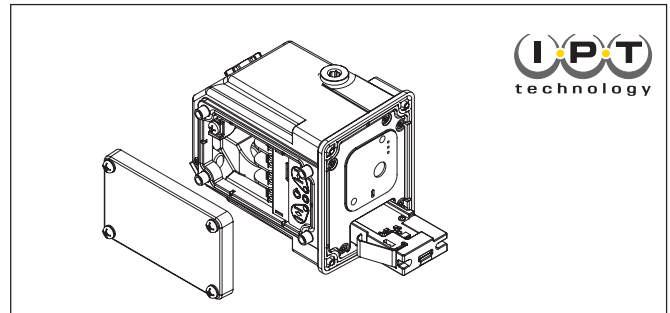
These variations of the FieldQ Smart Control Module offers, an intrinsically safe concept for "On/Off" valve automation. Its compact and robust construction incorporates the same IPT technology and same functionalities as all the other FieldQ Smart Modules have.

Construction:

The Control Module is mounted at the side of the Pneumatic Module in front of the basic actuator housing. Inside are terminals available for connecting control and feedback wiring. Two cable entries are available for this purpose.

Features:

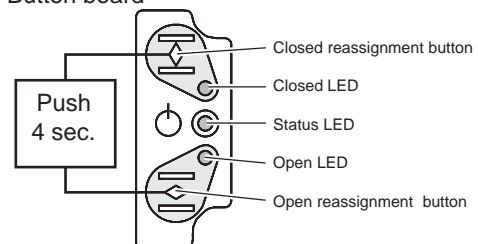
- **Supports both single and double acting actuators.**
- **One entry for all wiring** (control and feedback).
- **IPT-technology** (Intelligent Position Tracking).
- **Automatic initialization** for easy setup of the actuator. **Pressing 4 seconds** simultaneously the "Open" and "Closed" reassignment buttons starts auto-initialization procedure and sets automatically the feedback limit switches.
- **Readjustable or Reversible position feedback** using the reassignment buttons.
- **Three indication LED's** for "Status", "Open" and "Closed" position. Status LED indicates:
 - Initialization procedure running (blinking)
 - Successful initialization procedure (LED is on)
 - No or failed initialization (flashing)
- Control Module **is easily plugged in** the Pneumatic Module.
- Modular functionality for **easy update** towards present and future bus systems.
- **The power supply and all inputs and outputs are galvanic isolated** which offers greater flexibility for systems connection.



General Specifications:

Material housing	: Aluminium alloy
Cable entries	: 2x M20x1.5 or 2x 1/2"NPT
Electrical connections	: Internal terminal strip.
Enclosure	: IP65 / NEMA4X
Finish	: Polyester non-TGIC based powder coating.
Temperature	: -20° to +50°C / -4° to 122°F
Operating media	: Air or inert gasses, filtered at 5 micron
Dimensions	: See 1.603.01 for ISO 5211 (metric) See 1.603.04 for ISO 5211 (Imperial, UNC). See 1.603.02 for DIN 3337

FieldQ Button board



Status LED:

on off LED = **Flashing**

on off LED = **Blinking**

Time →



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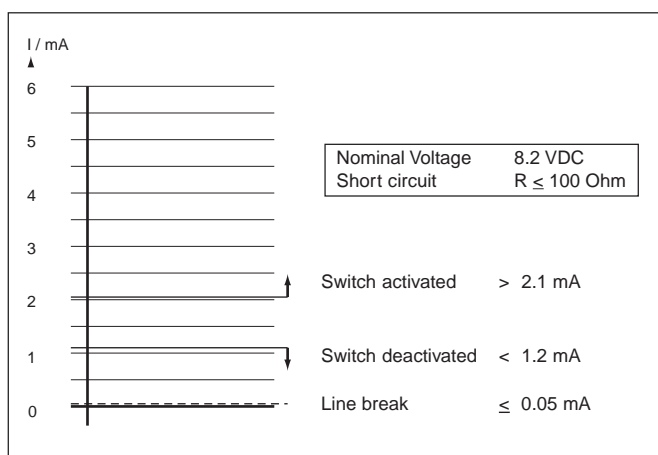
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Smart - Control Modules

QC03: IS, QC04: IS-NAMUR, Intrinsically safe

QC04 Short circuit monitoring and line break detection

Control Module QC04 is additionally equipped with NAMUR feedback according IEC 60947 part 5-6 (VDE 0660 sec. 212). In combination with a switch amplifier according this same standard, it offers next to feedback short circuit monitoring and line break detection.



Switch characteristics of NAMUR feedback outputs according IEC60947-5-6.

Options:

Manual Control

- Can be added as kit or factory option in 2 versions, "Push button" or a "Push and lock" button.

Glands and plugs

- FieldQ Control Modules QC03 or QC04 can be shipped with plastic or metal glands (M20x1.5 or 1/2"NPT) and rated IP65/NEMA4X or higher.

Intrinsically safe approvals:

Control Modules QC03 and QC04 have standard intrinsically safe approvals as listed below:

- **ATEX** : $\text{II 1 GD EEx ia IIC T4 T80}^\circ\text{C IP65}$
: T4 @ Ta = $-20^\circ\text{C} \dots +50^\circ\text{C}$ IP65
: Certificate : KEMA 02ATEX1242X
- **FM** : Intrinsically safe, Class I, II, III Div.1,
Groups ABCDEFG, T4, Type 4X/IP65
: Class I, Zone 0, AEx ia IIC T4, IP65,
: Ta = $-20^\circ\text{C} \dots +50^\circ\text{C}$ ($-4^\circ\text{F} \dots 122^\circ\text{F}$)
- **CSA** : Intrinsically safe, Class I, II, III Div.1,
Groups ABCDEFG, T4
: Ex ia IIC T4, IP65, (Class I, Zone 0/1)
: Ta = $-20^\circ\text{C} \dots +50^\circ\text{C}$ ($-4^\circ\text{F} \dots 122^\circ\text{F}$)
: Certificate: 1477696

Note:

- * The assembly of a FieldQ Actuator with the intrinsically safe QC03 or QC04 Control Module, may be used in (ATEX) classified Zones 1, 2 (Gasses) and/or 21, 22 (Dust).



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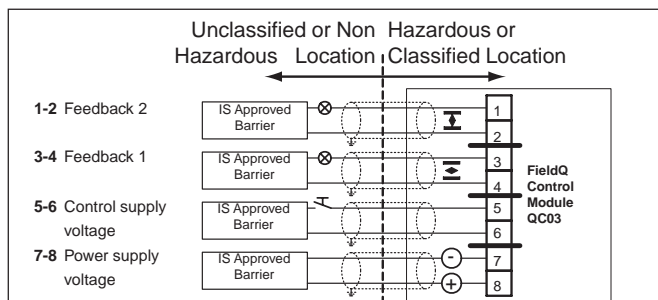
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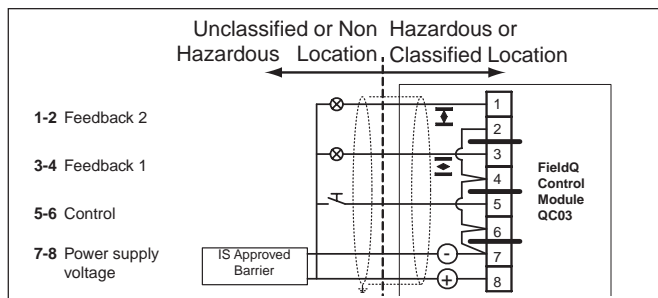
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Wiring & Electrical Specifications QC03 & QC04

QC03 IS

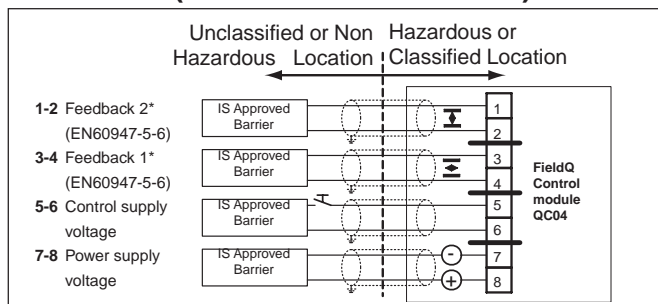


QC03, Terminal connections, with separate circuits

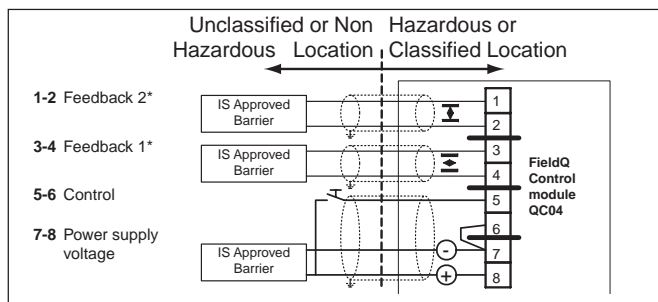


QC03, Terminal connections with common "-"

QC04 IS-N (with NAMUR feedback)



QC04, Terminal connections with separate circuits



QC04, Terminal connections with common "-" for control & power supply

Electrical data	QC03 - IS	QC04 - IS-N
Power supply input:		
Voltage	13.5 - 27.6 V	13.5 - 27.6 V
Maximum current	68 mA	68 mA
Maximum Power	1.2 W	1.2 W
Capacity Ci (max.)	15 nF	15 nF
Inductivity Li	0 mH	0 mH
Control signal input:		
Voltage	6 - 30 V	6 - 30 V
Maximum current	5 mA	5 mA
Capacity Ci (max.)	3.2 nF	3.2 nF
Inductivity Li	0 mH	0 mH
Contacts	Potential free	Potential free
Feedback outputs:		
Maximum voltage	30 VDC	IEC 60947-5-6
Maximum current	32 mA	IEC 60947-5-6
Resistance (nom.)	440 Ohm	440 Ohm
Switch resistance (off-state)	300kOhm	10440 Ohm
Maximum power	1.2 W	IEC 60947-5-6
Electric contacts	Potential free	IEC 60947-5-6
Temperature	-20°C to +50°C (-4°F to +122°F)	

Cable range:

Wire range : 2.5mm² max.
 Solid / Stranded wire : 0.2-3.3mm² or 24-12 AWG

Feedback 1 and 2 on QC03:

- Use approved barriers.

Feedback 1 and 2 on QC04:

- Use barrier according EN60947-5-6 (NAMUR) for appropriate signal level. Un = 8.2VDC

QC03 / QC04 Intrinsically Safe Entity Parameters

Circuit	Terminal	Ui	Ii	Pi	Ci	Li
Power Supply	7-8	30VDC	300mA	1.2W	15 nF	0
Control input	5-6	30VDC	300mA	1.2W	15 nF	0
Feedback 1	3-4	30VDC	300mA	1.2W	18 nF	0
Feedback 2	1-2	30VDC	300mA	1.2W	18 nF	0

For more detailed information on Intrinsically safe (Cl. I Div1 / Zone 1) installations, see Installation Guide DOC.IG.QC01.1



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