

Product data sheet

Sheet No.: 1.604.06 - Rev: C, Page 1 of 4
Date: December, 2008

FieldQ

Integrated Base Control Module

QC11, QC12 and QC13 (IP65/NEMA4X & NI/Ex nA)

Description:

These variations of the FieldQ conventionally wired control modules offer an integrated concept for valve automation. Its compact and robust construction incorporates basic control and feedback functionality. The modules are available as weather proof (IP65/NEMA4X) or Non-Incendive/Non-Sparking for use in hazardous area's classified as Zone 2 or 22 or Class I, II, III, Division 2.

Construction:

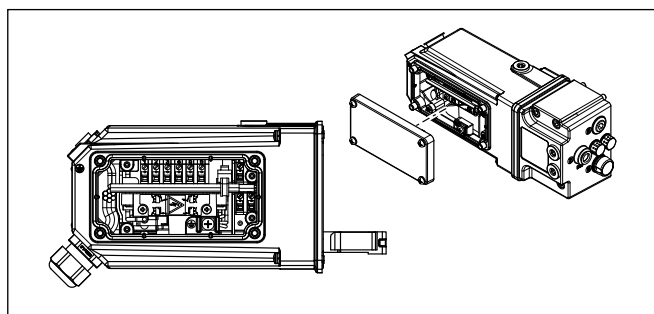
The Control Module is mounted at the side of the Pneumatic Module in front of the basic actuator housing. Inside, wiring terminals are available for connecting control signal to the pilot valve and feedback signals to the switches. Three cable entries are available.

Features:

- Basic actuator functions for fail safe (spring return) or double acting applications.
- Robust IP65/NEMA4X enclosure, protecting the IPT system, the pilot valve's coil, the feedback switches and terminals, suitable for indoor and outdoor use.
- All the control and feedback connections can be wired to the Control Module.
- IPT-technology.
- Easy to set feedback signals.
- Control module can be easily plugged in the pneumatic module.
- IECEx, ATEX, FM and CSA Non-Incendive or Non Sparking approvals.

General specifications:

Material housing	: Aluminium alloy
Electrical connections	: Internal 9 pole terminal strip.
Cable entries	: 3x M20x1.5 or 3x 1/2"NPT
Operating media	: Air or inert gasses, filtered at 50µm
Switch point	: Factory set at 15° maximum before each end of travel (open and closed position).
- Adjustable range	: Between -3° to 15° and +75° to +93° of the end position.
Enclosure	: IP65 / NEMA 4X
Finish	: Polyester non-TGIC based powder coating.
Temperature	: Depends on the applied switches and/or Hazardous Area approvals (See section Feedback switches QC11, QC12 & QC13)
Dimensions	: See 1.603.01 metric See 1.603.04 imperial/UNC See 1.603.02 DIN 3337



Pilot valve specifications

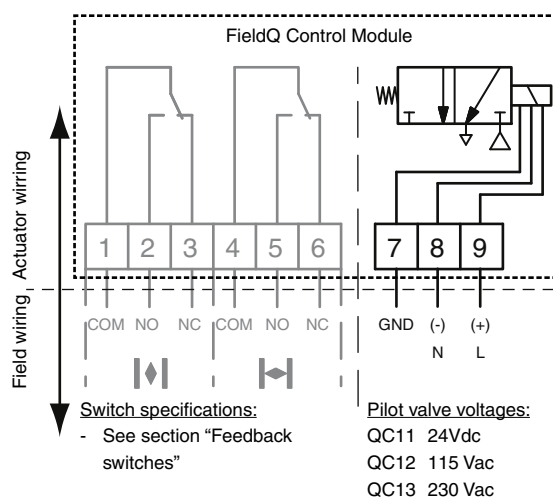
The pilot valve inside the Control Module sends the actuator to its open or closed position. The following pilot valves are available for the weather proof versions:

Module:	Voltages Un:	Power:
QC11	24VDC*	1.3W
QC12	115 VAC*	1.3VA
QC13	230 VAC*	1.9VA

* T ambient:	Un:
-20°C to +60°C (-4°F to +140°F)	: +10% / -15%
+60°C to +80°C (+140°F to +176°F)	: +0% / -10%

Wiring diagram:

- Pilot valves



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Product data sheet

Sheet No.: 1.604.06 - Rev: C, Page 2 of 4
Date: December, 2008

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Feedback switches QC11, QC12 and QC13 Control Modules

The feedback switches inside the module senses the open or closed position and are prewired to the terminal strip. The following feedback switches are available:

Mechanical switches	
Option code	M
Option code	G (gold plated)
Type	Mechanical V4
Voltage	M: 250 VAC or 250VDC (maximum) G: 125 VAC or 30VDC (maximum)
Contacts	NO and NC
Mechanical life	10 ⁷ operations (depends on electrical load).
Temperature	-20°C to +80°C (-4°F to +176°F)

Maximum currents:		
Load :	Non Inductive	Inductive
125 VAC	5 A (100 mA) ¹	3 A
250 VAC	3 A	2 A
30 VDC	4 A (100 mA) ¹	3 A
125 VDC	0.4 A	0.4 A
250 VDC	0.2 A	0.2 A

1 Values in parentheses are for the "G" type switch

Hermetically sealed switches	
Option code	D
Type	Hermetically sealed V3
Voltage	250 VAC or 250VDC (maximum)
Contacts	Gold plated, NO and NC
Mechanical life	10 ⁷ operations (depends on electrical load).
Temperature	-20°C to +80°C (-4°F to +176°F)




Maximum currents:		
Load :	Non Inductive	Inductive
125 VAC	5 A	5 A (Cos φ ≥ 0.9)
250 VAC	5 A	5 A (Cos φ ≥ 0.9)
30 VDC	5 A	5 A
125 VDC	0.5 A	0.06 A
250 VDC	0.25 A	0.03 A


Important


The mechanical (G-type) and hermetically sealed (D-type) switches have gold contacts. For applications where the benefits of gold contacts are required, the maximum current is 100mA. When the current is higher than 100mA, the gold plating will evaporate.

Hazardous area executions:

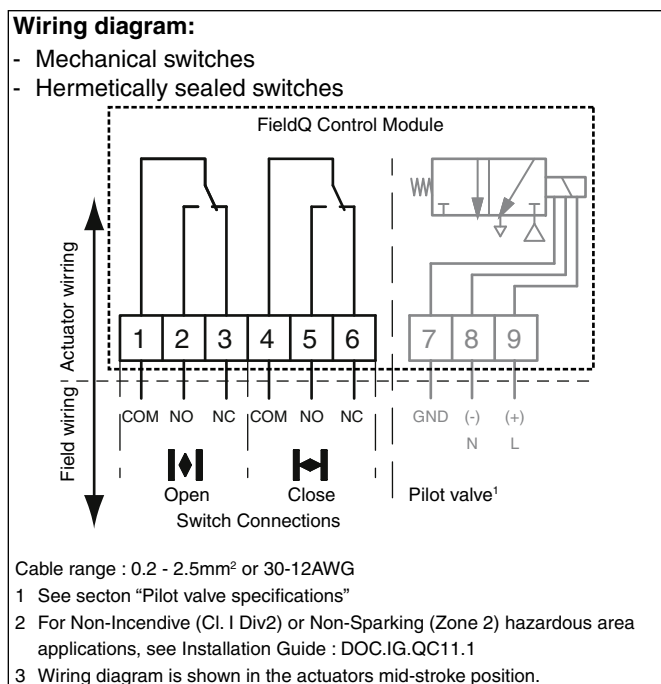
The Conventional Modules QC11, QC12 and QC13, with the Hermetically sealed switches, are available with IECEx, ATEX, FM and CSA Non-Incendive or Enclosed Break approvals for use in Zone 2 or 22 or Class 1 Div. 2 and for all gas and dust groups.

ATEX  0344


 Certificate: TÜV 07 ATEX 553926X

 N.I. Cl I, DIV2, GPS A,B,C,D
 S CL II, III, DIV2, GPS E,F,G, Type 4X
 Temp Class T4/T5, Class I, Zone 2, IIC
 FM Approval 3031376

 Class I,II,III, Div.2,
 Groups ABCDEFG, T4/T5, Type 4X
 Ex d nA IIC, T4/T5, IP65
 DIP A22 TA 90°C
 Certificate: 1638508

Temperature range:
 T4 @ Ta = -20°C(-4°F) to 80°C (176°F)
 T5 @ Ta = -20°C(-4°F) to 45°C (113°F)



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Product data sheet

Sheet No.: 1.604.06 - Rev: C, Page 3 of 4
Date: December, 2008

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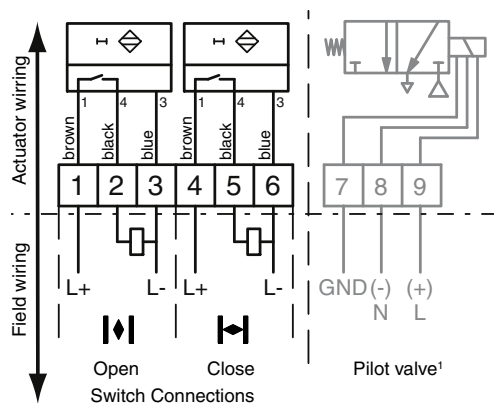
Feedback switches QC11, QC12 and QC13 Control Modules

The feedback switches inside the module senses the open or closed position and are prewired to the terminal strip. The following feedback switches are available:

3-Wire proximity switches	
Option code	O, V3 PNP
Option code	C, V3 NPN
Function	Make
Voltage	10 - 30V
Current	100 mA maximum
Off-state current	0 ... 0.5 mA typical
Temperature	-20°C to +70°C (-4°F to +158°F)

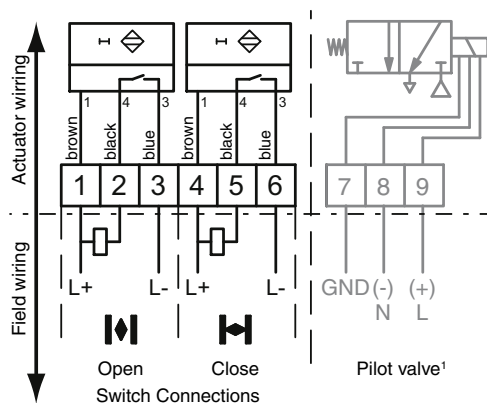
Wiring diagram:

3-Wire proximity switches PNP



Wiring diagram:

3-Wire proximity switches NPN



Cable range : 0.2 - 2.5mm² or 30-12AWG

1 See section "Pilot valve specifications"

2 For Non-Incendive (Cl. I Div2) or Non-Sparking (Zone 2) hazardous area

applications, see Installation Guide : DOC.IG.QC11.1

3 Wiring diagram is shown in the actuators mid-stroke position.



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Feedback switches QC11, QC12 and QC13 Control Modules




The feedback switches inside the module senses the open or closed position and are prewired to the terminal strip. The following feedback switches are available:


2-Wire NAMUR proximity switches	
Option code	N
Type	2-wire inductive
Voltage	8 VDC nominal
Ouput	Unswitched , > 3mA Switched , < 1mA
Temperature	-20°C to +80°C (-4°F to +176°F)
Compliant to	DIN EN 60947-5-6 (NAMUR)


2-Wire 115V proximity switches	
Option code	H
Voltage	20...140 Vac / 10...140 Vdc (47...63 Hz AC)
Current	Continuous 200 mA, Peak 0,9A (20ms / 0,5Hz),
Leakage current	< 0,8 mA
Temperature	-20°C to +80°C (-4°F to +176°F)

Hazardous area executions:

The Conventional Modules QC11, QC12 and QC13 in combination with the 2-Wire NAMUR proximity switches have IECEx, ATEX, FM and CSA Non-Incendive or Non Sparking approvals for use in Zone 2 or 22 or Class 1 Div. 2 and for all gas and dust groups.

ATEX  0344
 II 3 G Ex nA II T4/T5
 II 3 D Ex tD A22 T90°C IP65
 Certificate: TÜV 07 ATEX 553926X


 N.I. CL I, DIV2, GPS A,B,C,D
 S CL II,III, DIV2, GPS E,F,G, Type 4X
 Temp Class T4/T5; Class I, Zone 2, IIC
 FM Approval : 3031376


 Class I,II,III, Div.2,
 Groups ABCDEFG, T4/T5, Type 4X
 Ex nA II T4/T5, IP65,
 DIP A22 TA 90°C
 Certificate: 1638508

Temperature range:
 T4 @ Ta = -20°C(-4°F) to 80°C (176°F)
 T5 @ Ta = -20°C(-4°F) to 45°C (113°F)

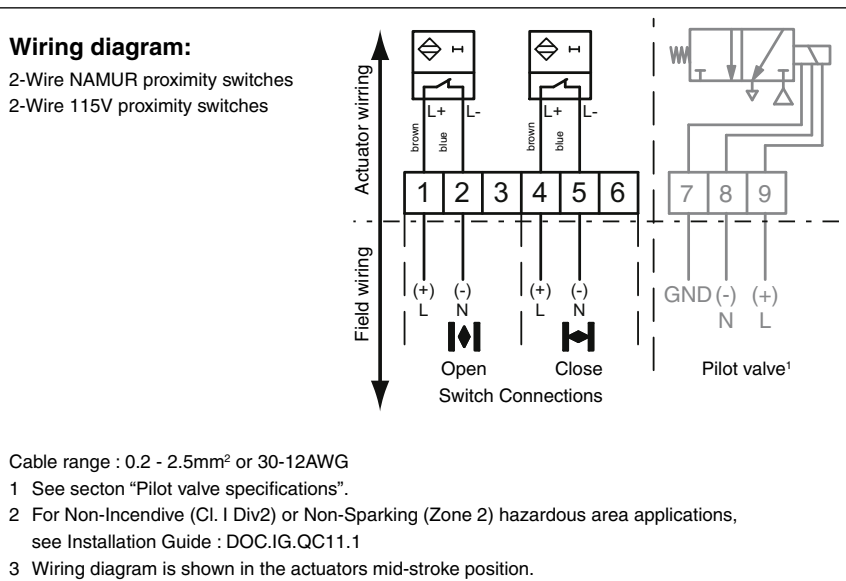
Hazardous area executions:

The Conventional Modules QC11, QC12 and QC13 in combination with the 2-Wire 115V proximity switches have FM and CSA Non-Incendive approvals for use in Class 1, Div. 2 and for all gas and dust groups.

 N.I. CL I, DIV2, GPS A,B,C,D
 S CL II,III, DIV2, GPS E,F,G, Type 4X
 Temp Class T4/T5; Class I, Zone 2, IIC
 FM Approval : 3031376

 Class I,II,III, Div.2,
 Groups ABCDEFG, T4/T5, Type 4X
 Ex nA II T4/T5, IP65,
 DIP A22 TA 90°C
 Certificate: 1638508

Temperature range:
 T4 @ Ta = -20°C(-4°F) to 80°C (176°F)
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