


1 SCOPE

This document provides guidelines for the installation of the DeltaV™ KJ1710 Single Port Fiber Switch and KJ1740 Four Port Fiber Switch in locations with potentially explosive atmospheres. The KJ1710 and KJ1740 were evaluated for the following hazardous locations and are labeled accordingly.

- ATEX - Zone 2 (ATEX Marking:  II 3 (1)G EEx nA [op is] IIC T4)
- FM - NI CL I, DIV 2, Groups A, B, C, D;
CL I, ZN 2, IIC; T4 Ta = 70C
Fiber optic port:
AIS CL I, DIV 1, Groups A, B, C, D;
CL I, ZN 0, AEx [ia] IIC; T4 Ta = 70°C

Installation shall be in accordance with:

- ATEX - EN 60079-14.
- FM - Article 500 of the National Electrical Code, ANSI/NFPA-70.
- Any local-specific regulations.

2 PRODUCT DESCRIPTION

The KJ1710 Single Port Fiber Switch is a five port Ethernet switch with four 10/100BaseTx ports and one 100BaseFx port. The KJ1740 Four Port Fiber Switch is a five port Ethernet switch with one 10/100BaseTx port and four 100BaseFx ports. They are DIN rail mountable and provide comprehensive LED diagnostics. The twisted pair ports are intended for, but not limited to, general purpose 'Control Network' connections. The fiber ports are intended for, but not limited to, connection to the KJ7000 Series Zone 1 System. For additional information regarding the 'Control Network' refer to Section 2 and Appendix G in the 'Installing Your DeltaV™ Automation System' manual.

The KJ1710 and the KJ1740 may be located in safe areas or locations with potentially explosive atmospheres when the installation requirements of this document are followed.

3 ELECTRICAL SPECIFICATIONS

Input voltage: 24VDC ±20%

Input current: 0.25A (KJ1710), 0.35A (KJ1740)

Twisted Pair port: 10/100BaseT, RJ45

Cable type: Category 5e screened twisted pair (ScTP)

Cable distance: 100m

Fiber Interface 100BaseFx, full duplex

Fiber distance: 2km nominal

Fiber type: 62.5/125 or 50/125 micron multimode, graded index, glass silica, fiber core

Attenuation: ≤ 11dB (62.5/125), ≤ 8dB (50/125)

Connector type: MT-RJ

4 MECHANICAL SPECIFICATIONS

Dimensions: Depth (front to back): 114mm

Height (top to bottom): 100mm

Width (side to side): 35mm (KJ1710), 52.5mm (KJ1740)

Mass: 0.206kg (7.25 oz) (KJ1710), 0.227kg (8.0 oz) (KJ1740)

Wiring connections: see section 7

5 ENVIRONMENTAL SPECIFICATIONS

Operating Temperature: -40°C to 70°C (-40°F to 158°F)

Storage Temperature: -40°C to 85°C (-40°F to 185°F)

Relative Humidity: 5% to 95% non-condensing

Airborne Contaminants: ISA-S71.04-1985 Class G3

Vibration: 1mm peak-to-peak from 5Hz to 16Hz, 0.5g from 16Hz to 150Hz

Shock: 10g ½-sine wave for 11ms

6 EQUIPMENT ENCLOSURE

The final equipment enclosure was not examined as part of the certification but it must comply with the following requirements.

In hazardous locations the KJ1710 and KJ1740 must be mounted in an enclosure in accordance to IEC-60079-15, or one of the protections listed in clause 1.2 in EN 50014 with at least a degree of protection IP54 according to EN 60529: 1991. Metal enclosures, which are rated IP-54, pass the required impact specification by default.

Consult Appendix I in the 'Installing Your DeltaV™ Automation System' manual for temperature de-rating calculations for system components when located in an enclosure. Mounting shall allow sufficient natural airflow.

7 INSTALLATION REQUIREMENTS

The KJ1710 and KJ1740 have provisions for two power inputs, twisted pair Ethernet connections, Ethernet fiber connections and a Management Module connection. The input power, twisted pair Ethernet connections and Management Module input are not intrinsically safe and should not be connected or disconnected in hazardous locations unless the connections have been de-energized. The Ethernet fiber ports are energy limited and certified to allow use in Zone 0 and Zone 1 environments.

Power Inputs: The KJ1710 and KJ1740 have provisions for redundant power supply inputs. These inputs are diode ORed internally to the module and also include transient voltage suppression. For the KJ1710 the right power connector numbered 4, 5 and 6 (see the KJ1710 illustration below) has a provision for grounding the screen of both the twisted pair cables and Management Module port. When the KJ1710 is located in a hazardous location it is imperative that the 'shield ground' (pin 5) be connected to earth ground. The KJ1740 (see the KJ1740 illustration below) has a provision for grounding the Management Module port screen and the twisted pair cable screen. To ground the Management Module screen connect pin 2 of the power connector to earth ground and to ground the screen of the twisted pair cable connect pin 5 of the power connector to earth ground. When the KJ1740 is located in a hazardous location it is imperative that the pins 2 and 5 be connected to earth ground.

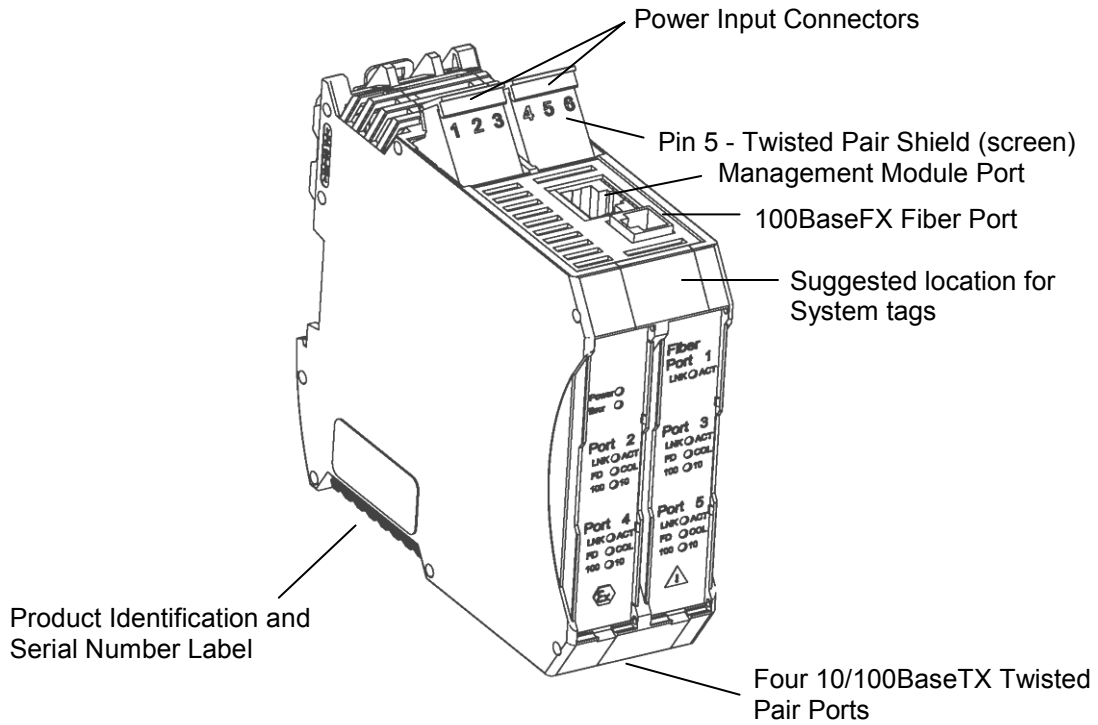
System tags: When adding system tags to the module do not obscure any ATEX, FM or warning markings. A recommended location for system tags is on the housing itself above the LED covers.

Product Identification: The product type number and serial number with date code can be located on the product identification label located on the side of the housing. The date code is the first four digits of the serial number and is in the YYWW format.

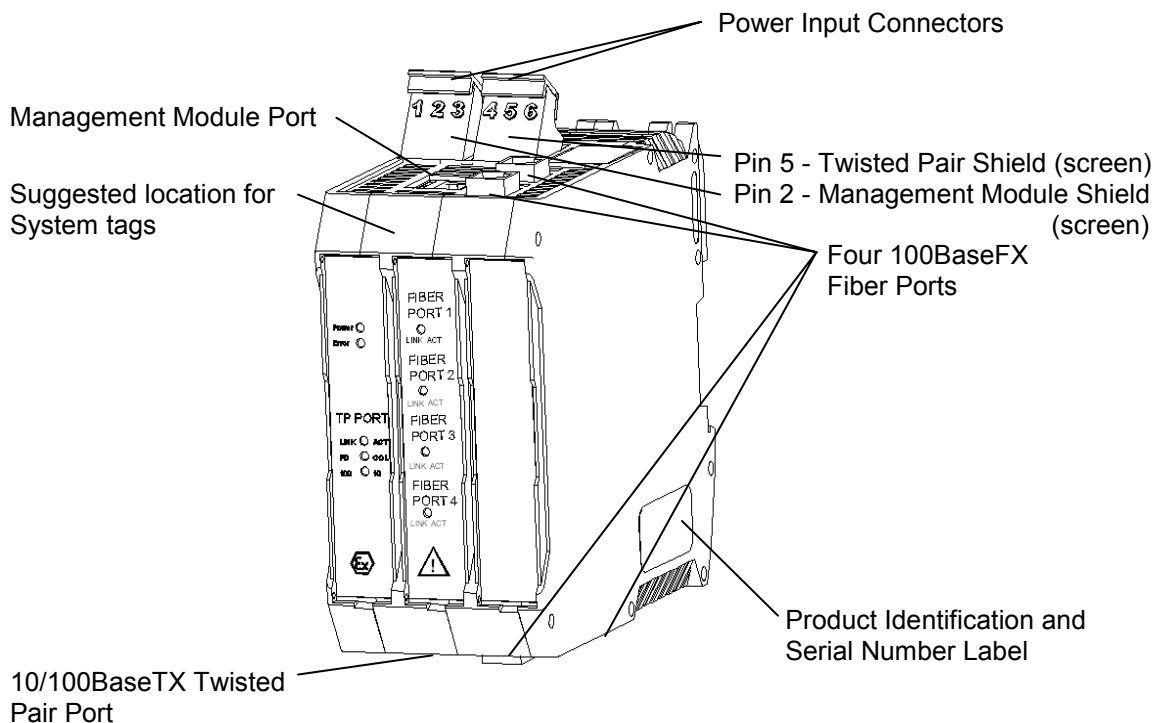
WARNING: Do not separate when electrical connections are energized unless the area is known to be non-hazardous.

WARNING: Substitution of components may impair intrinsic safety.

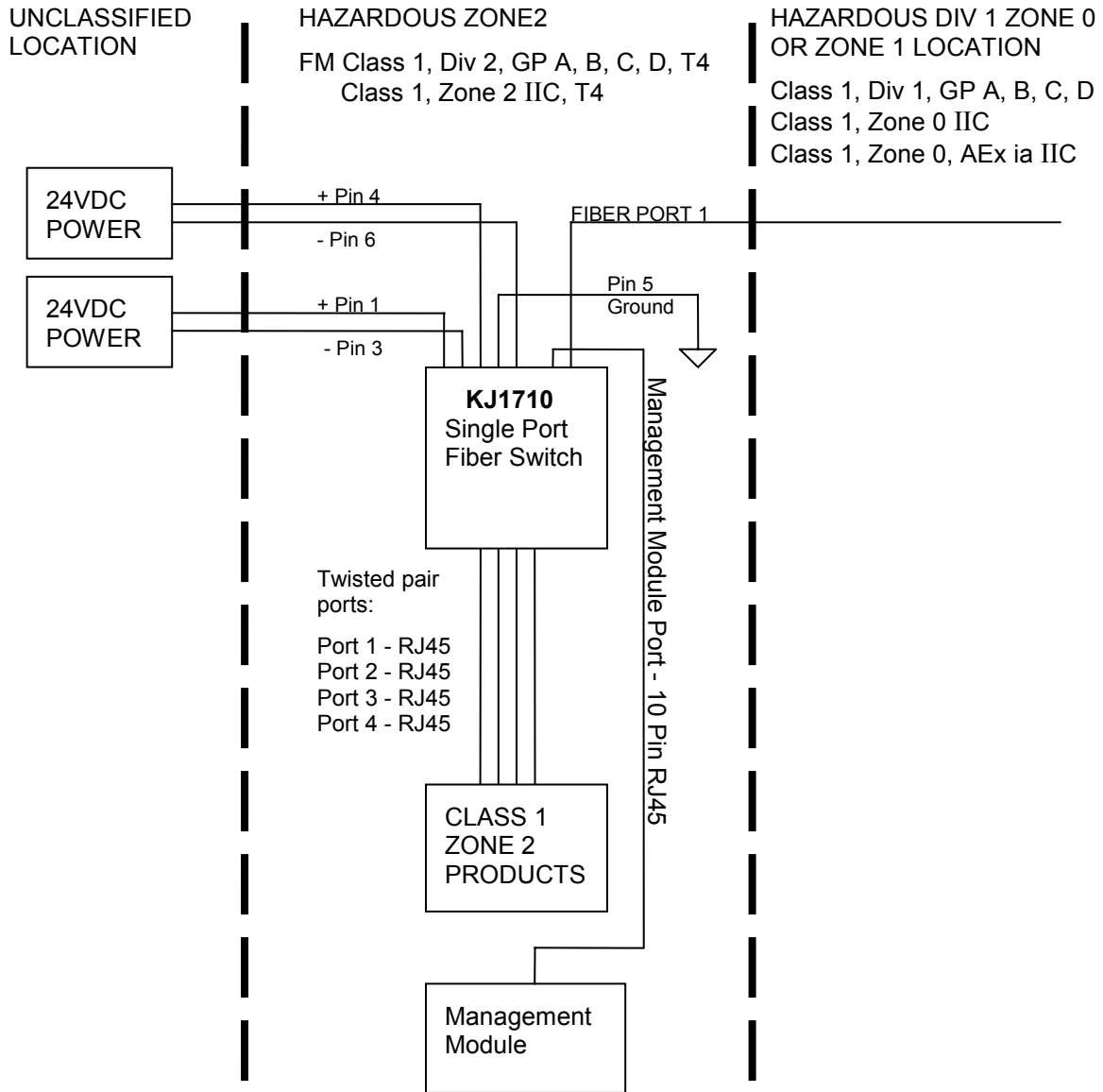
KJ1710

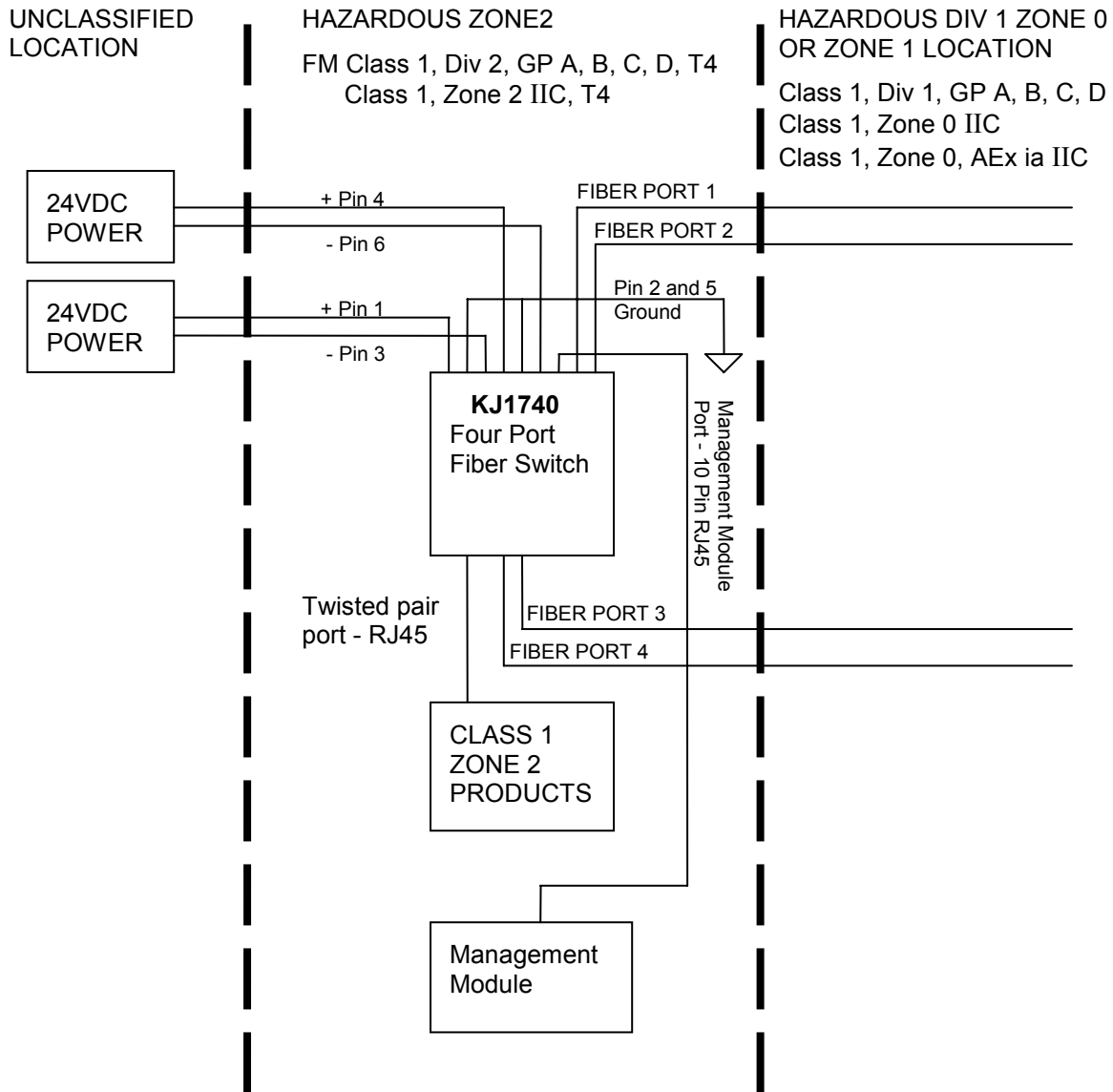


KJ1740



8 INSTALLATION DIAGRAMS





The wiring is to be installed per the NEC, excluding Non incendive field wiring.

9 INSPECTION AND CLEANING

During function inspections, comply with the guidelines set out in EN 60079-17. This standard contains the regulations of the international standard IEC 60079-17.

WARNING: Plastic components can become electrostatically charged during cleaning. In hazardous locations this may pose a hazard. Observe proper ESD handling precautions and only clean the modules with a damp cloth.

Drawn By:	RDT	Date:	20FEB06
Checked By:	MJH	Date:	21FEB06
Approved By:	RDT	Date:	21FEB06
Revised By:	RDT	Date:	05FEB07

ATEX Instruction Sheet

Part Number: D803071X012

Publish date: April, 2006

Single Port Fiber Switch

KJ1710X1-BA1 Single Port Fiber Switch

Hazardous Atmosphere



II 3 (1) G

KEMA No. 04ATEX1175X

EExnA [op is] IIC T4

Power Specifications

Input power +19.2 - 28.8 VDC at 250 mA

Environmental Specifications

Ambient Temperature -40 to 70 °C

Shock 10 G ½-sinewave for 11 ms

Vibration 1 mm peak-to-peak from 5 Hz to 16 Hz, 0.5 g from 16 Hz to 150 Hz

Airborne Contaminants ISA-S71.04 –1985 Airborne Contaminants Class G3

Relative Humidity 5% to 95% non-condensing

Note: See product label for serial number and location and date of manufacture.

Warning: This product has specific instructions for installation, removal and operation in hazardous areas. Refer to document 12P3517 "*DeltaV™ KJ1710 Single Port Fiber Switch Installation Instructions*". Other installation instructions are available in the "*Installing Your DeltaV™ Automation System*" and the "*Installing Your DeltaV™ Zone 1 Intrinsically Safe Hardware*" manuals.

Removal and Insertion

This unit cannot be removed or inserted with system power energized.

Maintenance and Adjustment

This unit contains no user serviceable parts and should not be disassembled for any reason. Calibration is not required.

Other Safety Approvals



APPROVED

NI CL I, DIV 2, Groups A, B, C, D;
CL I, ZN 2, IIC; T4 Ta = 70°C
Fiber optic port:
AIS CL I, DIV 1, Groups A, B, C, D;
CL I, ZN 0, AEx [ia] IIC; T4 Ta = 70°C



LR87534



EMERSON™
Process Management

ATEX Instruction Sheet

Part Number: D80080X012

Publish date: March, 2007

Four Port Fiber Switch

KJ1740X1-BA1 Four Port Fiber Switch

Hazardous Atmosphere



II 3 (1) G

KEMA No. 04ATEX1175X

EEx nA [op is] IIC T4

Power Specifications

Input power +19.2 - 28.8 VDC at 350 mA

Environmental Specifications

Ambient Temperature -40 to 70 °C

Shock 10 G ½-sinewave for 11 ms

Vibration 1 mm peak-to-peak from 5 Hz to 16 Hz, 0.5 g from 16 Hz to 150 Hz

Airborne Contaminants ISA-S71.04 –1985 Airborne Contaminants Class G3

Relative Humidity 5% to 95% non-condensing

Note: See product label for serial number and location and date of manufacture.

Warning: This product has specific instructions for installation, removal and operation in hazardous areas. Refer to document 12P3517 "*DeltaV™ KJ1710/KJ1740 Switch Installation Instructions*". Other installation instructions are available in the "*Installing Your DeltaV™ Automation System*" and the "*Installing Your DeltaV™ Zone 1 Intrinsically Safe Hardware*" manuals.

Removal and Insertion

This unit cannot be removed or inserted with system power energized.

Maintenance and Adjustment

This unit contains no user serviceable parts and should not be disassembled for any reason. Calibration is not required.

Other Safety Approvals



APPROVED

NI CL I, DIV 2, Groups A, B, C, D;
CL I, ZN 2, IIC; T4 Ta = 70°C
Fiber optic port:
AIS CL I, DIV 1, Groups A, B, C, D;
CL I, ZN 0, AEx [ia] IIC; T4 Ta = 70°C



LR87534



EMERSON™
Process Management

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number: **KEMA 04ATEX1175 X**

(4) Equipment or protective system: **Single Port Fiber Switch Type KJ1710**

(5) Manufacturer: **Emerson Process Management Ltd**

(6) Address: **Meridian South, Leicester LE191WY, United Kingdom**

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential report no. 2072893.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50021 : 1999

draft IEC 60079-28 : 2005

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment or protective system according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:



II 3 (1) G Ex nA [op is] IIC T4

Arnhem, 29 April 2005
KEMA Quality B.V.



C.G. van Es
Certification Manager

* This Certificate may only be reproduced in its entirety and without any change

SCHEDULE

(13)

(14)

to EC-Type Examination Certificate KEMA 04ATEX1175 X

(15) **Description**

The Single Port Fiber Switch type KJ1710 is a 5 port ethernet switch, with four 10/100BaseTx ports, one optical 100BaseFx ethernet port and a management module port.

The Single Port Fiber Switch type KJ1710 is a part of a system and is suitable for DIN rail mounting.

Ambient temperature range -40 °C ... +70 °C.

Electrical data

Supply 19.2Vdc ... 28,8Vdc, 250mA

Optical ethernet port..... inherently safe; optical power < 15 mW

Installation instruction

The power supply shall be connected according to the installation instructions.

The optical 100BaseFx ethernet port may extend into hazardous locations requiring apparatus of equipment group 1G.

(16) **Report**

KEMA No. 2072893.

(17) **Special conditions for safe use**

The Single Port Fiber Switch shall be mounted in an additional enclosure. The enclosure shall comply with the requirements of EN 50021 with a degree of protection of at least IP54.

For the ambient temperature range and the electrical data see (15).

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2072893.