



Operating Instructions / Manual

SK-DRAG-GBIC-SX
SK-EL1000-2GU-3TX-4SX-opis
SK-EL1000-2GU-3TX-4LX-opis

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1 Preface

These Operating Instructions / manual contain information in the Gigabit Ethernet Switches and how they are commissioned.

2 Product details

The Ethernet Switches dealt with in this documentation are "unmanaged" Ethernet Switches with a gigabit connection and a different number of connections.

They can be mounted on a DIN rail and have various LEDs.

These Ethernet Switches are used when series ET-/MT-4x7 or ET-/MT-5x7 HMI units are connected to a communication system via the FO connection.

3 Type allocation

Since the beginning of 2013, the T-series devices have been allocated new type names according to the following pattern:

To avoid having to re-write certifications, the names in the certificates remain the same, but the devices receive new names.

In the interest of a clear link between device type and certificate, both device names are listed on the type plate from 01.04.2013 onwards.

3.1 Type marking

Old (certificate)	New
T-Ex-KVM*-MM*	SK-DRAG-GBIC-SX
T-Ex-KVM*-MM*	SK-EL1000-2GU-3TX-4SX-opis
T-Ex-KVM*-SM*	SK-EL1000-2GU-3TX-4LX-opis

* = alphanumeric or symbolic characters without relevance to explosion protection.



NOTICE

The Ethernet Switches described in this document are associated equipment and as such covered by the certificates of the ET-xx7 (T-Ex) main devices.

4 Technical data


Product version / definition	SK-DRAG-GBIC-SX	SK-EL1000-2GU-3TX-4SX-opis	SK-EL1000-2GU-3TX-4LX-opis
Picture			
Function / Equipment			
Version	Single Port Fiber Switch	Quad Port Fibre Switch	Quad Port Fibre Switch
Ethernet interface			
Copper (TX)	10/100/1000Base-TX		
Plug type	RJ45		
Quantity	4	3	3
Optical fibre	1000Base-SX		1000Base-LX
Plug type	LC		
Quantity	1	4	4
Cable type	Multi-mode	Multi-mode	Single mode
Core diameter	50 / 62.5 µm		9 µm
Outer diameter	125 µm		
Type of protection	Intrinsically safe (Ex op is)		
Wavelength	850 nm		1310 nm
Radiant power	0.22 mW		
Max. radiant power:	35 mW		
Data cable lengths			
Copper (TX)	up to 100 m (330 ft) via CAT5 cable		
Optical fibre	up to 500 m (1,640 ft)		up to 10,000 m (32,808 ft)
LEDs	Power (green) Error (red) Link / activity (green) Speed (green)		
Power supply	Redundant		
Connections	via screw terminals		
Voltage supply	12 - 48 VDC	12 - 65 VDC	
Power	5.5 W	8 W	
Ambient conditions			
Operating temperature range	-10 °C to +60 °C (14 °F to 140 °F)	-30 °C to +55 °C (-22 °F to 131 °F)	
Storage temperature range	-40 °C to +85 °C (-40 °F to 185 °F)		
Relative humidity	5 to 95 %, non-condensing		
Enclosure	Metal	Stainless steel, powder-coated	
Dimensions (W x H x D) [mm] (inch)	30 x 140 x 95 (1.18 x 5.51 x 3.74)	70 x 130 x 145 (2.76 x 5.12 x 5.71)	
Weight		850 g (1.87 lbs)	

5 Conformity to standards

The Ethernet Switches comply with the following standards and directive:

Standard	Classification
Directive 94/9/EC	
2. Supplement	
EN 60079-0 : 2009 IEC 60079-0 : 2007	General requirements
EN 60079-28 : 2004 IEC 60079-28 : 2006	Optical radiation
Electromagnetic compatibility	
Directive 2004/108/EC	
acc. to EN 61000	

6 Marking

Manufacturer	R. STAHL HMI Systems GmbH	
Type code	SK-DRAG-GBIC-SX SK-EL1000-2GU-3TX-4SX-opis SK-EL1000-2GU-3TX-4LX-opis	
CE classification:	CE 0158	
Testing authority and certificate number:	BVS 11 ATEX E 102 X IECEX TUR 11.0075X	
Ex classification:		II (1) G [Ex op is Ga] IIC
ATEX guideline 94/9/EC		II (1) D [Ex op is Da] IIIB
IECEX		[Ex op is Ga] IIC [Ex op is Da] IIIB

7 Permitted maximum values

7.1 Inherently safe optical interface

Optical fibre Ethernet
Multi mode

Wavelength	850 nm
Radiant power	0.22 mW
max. radiant power:	35 mW

Single mode

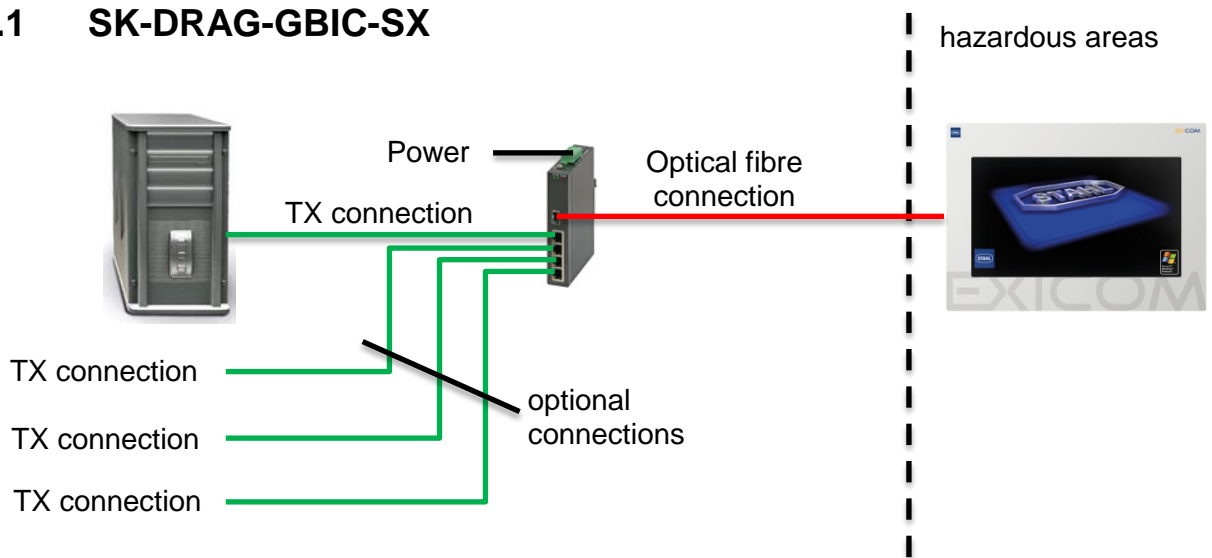
Wavelength	1310 nm
Radiant power	0.22 mW
max. radiant power:	35 mW

8 Installation safety information

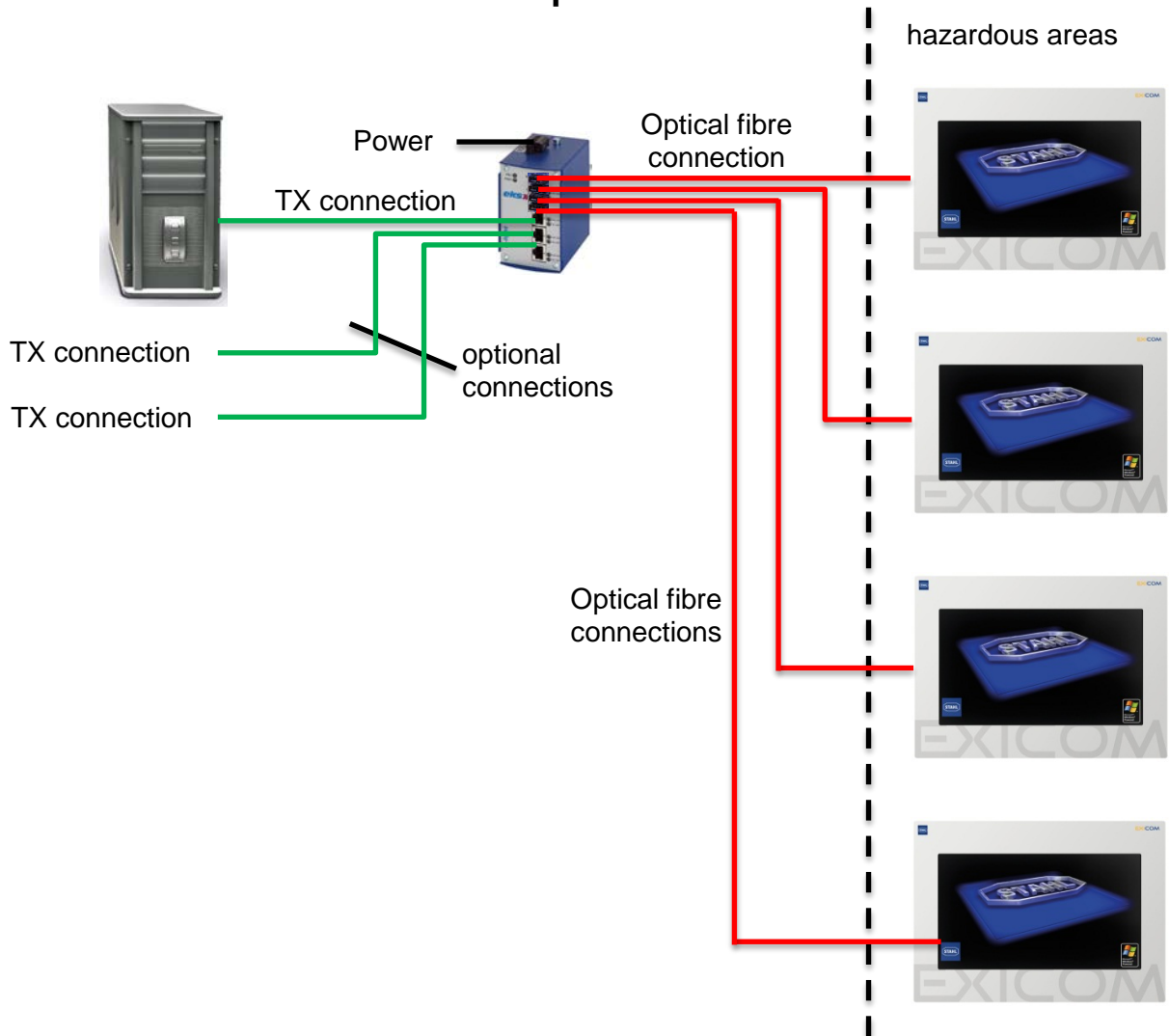
- When electrical equipment and installations are being operated, parts inevitably will be under dangerous levels of high voltage. Consequently, only electric experts or trained personnel under the supervision and instruction of electric experts may carry out any work on electric installations and equipment according to electric and technical rules.
- Switch off the systems and end-devices and makes sure they are de-energizd.
- Click the device onto a DIN EN mounting rail and check it is safely mounted !
- Only use the corresponding FO connection plugs. We draw your attention to the fact that any connection with a wrong connector may cause damage to the optical connections ! Please also note that plugs with a locking device may only be mounted in a specific, defined position.
- Do not look into the optical sender ! The focused and, depending on its wavelength, visible or invisible ray of light may damage your eyes !
- Connect the incoming fibre optic cable with the optical receiver and the outgoing optical fibre cable with the optical sender of the optical fibre system.
- Use the enclosed plug to protect the sender and receiver of the FO system against dirt and dust when not installed / not in use.
- Do not bend the FO cable too far and take note of the bending radius specified by the manufacturer. If bent too far, the cable may be damaged and / or the communication between the FO transducers can no longer be guaranteed.
- Switch on the operating voltage for the FO system. The systems require an operating voltage of 24 VDC connected at terminals VDC1 or VDC2 and GND. VDC1 and VDC2 are redundant voltage supply inputs with pole reversal protection.
- At the place of installation voltage must not exceed 250 V and short-circuit current must not exceed 1500 A.

9 Connection diagrams

9.1 SK-DRAG-GBIC-SX



9.2 SK-EL1000-2GU-3TX-4SX-opis



10 Declaration of EC conformity

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE



R. STAHL HMI Systems GmbH • Im Gewerbegebiet Pesch 14 • 50767 Köln, Germany
 erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt
that the product
que le produit

T-Ex Terminal

Typ, type, type:

Display Unit T-EX-##*-CAT7*
 Display Unit T-EX-##*-MM*
 Display Unit T-EX-##*-SM*
 Keyboard Trackball Unit T-EX*-KB-TB*
 Keyboard Mouse Unit T-EX*-KB-M*
 Keyboard Pad Unit T-EX*-KB-P*
 Keyboard Joystick Unit T-EX*-KB-J*
 Transmission Unit T-EX-KVM*-CAT7*
 Transmission Unit T-EX-KVM*-MM*
 Transmission Unit T-EX-KVM*-SM*

*=any alphanumeric or symbolic character, without relevance for explosion protection
 #=one numeric character, without relevance for explosion protection

Kennzeichnung, marking, marquage:

Display Unit:
 II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb
 II 2(1) D Ex tb IIIC [ia op is Da] IP64 T110°C Db
 Keyboard Trackball Unit, for Keyboard Mouse Unit,
 for Keyboard Pad Unit, for Keyboard Joystick Unit:
 II 1 G Ex ia IIC T4 Ga
 II 1 D Ex ia IIIB T110°C Da
 Transmission Unit:
 II (1) G [Ex op is Ga] IIC
 II (1) D [Ex op is Da] IIIB

CE 0158

mit der EG-Baumusterprüfbescheinigung,
ausgestellt durch Benannte Stelle:
under EC-Type Examination Certificate,
issued by notified body:
avec Attestation d'examen CE de type,
exposé par organisme notifié:

BVS 11 ATEX E102 X

DEKRA EXAM GmbH (ID 0158)
 Dinnendahlstraße 9,
 44809 Bochum
 Germany

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie <i>Terms of the directive</i> <i>Prescription de la directive</i>	Nummer sowie Ausgabedatum der Norm <i>Number and date of issue of the standard</i> <i>Numéro ainsi que date d'émission de la norme</i>
94/9/EG: ATEX-Richtlinie	EN 60079-0: 2009
94/9/EC: ATEX Directive	EN 60079-5: 2007
94/9/CE: Directive ATEX	EN 60079-7: 2007
	EN 60079-11: 2007
	EN 60079-26: 2007
	EN 60079-28: 2004
	EN 60079-31: 2009
	EN 61241-11: 2006

Das Produkt entspricht Anforderungen aus:
Product corresponds to requirements from:
Produit correspond aux exigences:
EN 60079-0: 2012,
EN 60079-11: 2012
EN 60079-28: 2007

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE



2004/108/EG:	EMV-Richtlinie	EN 61000-6-2: 2006
2004/108/EC:	EMC Directive	EN 61000-6-4: 2007
2004/108/CE:	Directive CEM	
2006/95/EG:	Niederspannungsrichtlinie	EN 50178: 1997
2006/95/EC:	Low Voltage Directive	EN 61010-1: 2001+ Corrigendum / Errata
2006/95/CE:	Directive Basse Tension	

Köln, 13.01.2015

Ort und Datum
 Place and date
 Lieu et date

J. Düren

J. Düren
 Technical Director

W. Bertges

W. Bertges
 Quality Manager

11 Release notes

The chapter entitled "Release Notes" contains all the changes made in every version of the Operating Instructions / manual.

Version 01.00.00

- Original version of the manual / operating instructions

Version 01.00.01

- Changing file name, exchange of characters "HM" with "OI"
- Changing of address and phone numbers
- Addition of IECEx data
- Addition of "Declaration of EC conformity"
- Text and formal corrections

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