A MITEL
PRODUCT
GUIDE

Unify OpenScape Alarm Response

OScAR 400

Service Manual
07/2024

A31003-S1851-S100-01-7620

Mitel

Notices

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Europe Limited. The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes. No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

Trademarks

The trademarks, service marks, logos, and graphics (collectively “Trademarks”) appearing on Mitel’s Internet sites or in its publications are registered and unregistered trademarks of Mitel Networks Corporation (MNC) or its subsidiaries (collectively “Mitel), Unify Software and Solutions GmbH & Co. KG or its affiliates (collectively “Unify”) or others. Use of the Trademarks is prohibited without the express consent from Mitel and/or Unify. Please contact our legal department at iplegal@mitel.com for additional information. For a list of the worldwide Mitel and Unify registered trademarks, please refer to the website: http://www.mitel.com/trademarks.

Contents

1. Conventions and Operating Instructions

Note:

This document is written for service engineers and technicians who carry out the initial installation and start up of OScAR 400.

Overview

This chapter covers the notations and the symbols that are used throughout this document. It also offers valuable instructions and provides information on data protection and data security.

Content

The following areas are covered in this chapter:

Information on the product designation

- As a rule, the hardware platform is referred to as **OScAR 400**.
- The products that currently use this hardware platform are **OScAR med 400**, **OScAR Seco 400, OScAR pro 400**
- The name of the products **OScAR eco 400** and **OScAR pro 400** when marketed and sold through Unify becomes **OScAR-Eco 400** and **OScAR-Pro 400** (OScAR = **O**pen **Sc**ape **A**larm **R**esponse).
- The screenshots in this document carry the product-independent hardware designation **OScAR 400**.

1.1 Overview of the chapters in this document

This document also includes the following chapters:

Chapter	Description
Chapter 2, "OScAR-400 Specification"	This chapter gives you an overview of the hardware configuration of OScAR 400 in combination with OScAR med 400, OScAR eco 400 or OScAR pro 400.
Chapter 3, "Product Components"	This chapter gives you an overview of the basic technical characteristics of OScAR 400.
Chapter 4, "Hardware Operations"	This chapter describes the hardware operations on the server and also includes the safety instructions in German, Finnish, Danish, Swedish and Norwegian.
Chapter 5, "Wiring Plans"	This chapter covers the different wiring plans of OScAR400.
Chapter 6, "Declarations of Conformity"	This chapter contains the declarations of conformity for OScAR 400.
Chapter 7, "PBX Systems and Soft Switches"	This chapter covers in brief the coupling of OScAR 400 to the PBX network or the convergent voice/data networks and to their trunk connections. It also refers to the external configuration instructions for the respective interface(s).

Table 1-1 Overview of chapters

1.2 Notations and symbols

Notations

The following definitions are used in this document:

`Text`	All texts from files that are described in this document, and all entries that are added to these files, appear in the monospace font `Courier`.
The password **123456** ...	Details and instructions in the continuous text that are of particular importance or must be heeded are output in bold print. In the same way, buttons and menus also appear in bold print.
The file `global.cfg`	Files and directories are output in the monospace font `Courier`.
<*Placeholder*>	Entries and outputs, both of which may vary dependent on the individual situation in which they appear, are placed in angle brackets and are in *italics*.
[beginning of value range ... end of value range; default] or [X]	All default values and all value range details from data fields are placed in squared brackets and appear in italics. The suffix *[x]* after a possible entry in a database field indicates that this option is also the default value.

Table 1-2 Notations

Symbols

The following symbols are used in this document:

Note:

The "!" on blue background is used to indicate additional helpful information.

Caution!

The "!" on a yellow background indicates important information that must be observed with special care.

Warning!

The warning sign is used to alert you to a hazardous or high risk situation. It means that you are currently exposed to a risk or hazardous situation that may cause physical injury. Before you start working with any apparatus, please always be aware of the risks that may arise in connection with the device's electric currents and follow the standard practices to avoid accidents.

1.3 Reporting of accidents

- Be careful to report all accidents immediately, also near accidents and any potential safety hazard.
- Report every electrical shock, no matter how small.
- Never allow the storage of easily inflammable substances in the proximity or even in the same room with the communications system.
- Make sure the work area is always well lit.
- Remember that an untidy work area can lead to accidents.

1.4 Data protection and data security

In order to comply with the legal provisions that apply when providing services, from any service performed at customers' sites to teleservice, we strongly urge all readers to follow the below-listed best practices. This will not only help you protect the interests and concerns of customers and clients, but also avoid unwanted implications for yourself.

Please help ensure complete data protection and data security by being aware of these issues as you work:

- Always make sure that only authorized persons have access to your client and customer data.
- Assign passwords whenever you can. Do not grant unauthorized persons access to your passwords, for example by writing them down.
- Always make sure that no unauthorized persons can process (e. g. save, edit, transmit, block, or delete) or utilize customer data in any way.
- Always make sure that no unauthorized persons have access to data storage media, for example to backup disks or printouts of logfiles or reports This applies both to service work provided directly at the customer and to the storage and transport of data carriers.
- Always make sure that every data storage medium that is no longer needed is properly and fully destroyed. Also be careful not to leave behind any papers that could become openly accessible to others.

Note:
We urge all readers to work together closely with the contact persons of your clients. This not only helps to build trust but will also help you reduce your own workload.

2. OScAR-400 Specification

Overview

This chapter gives you an overview of the hardware configuration of OScAR 400 in combination with OScAR med 400, OScAR eco 400 or OScAR pro 400.

Content

The following areas are covered in this chapter:

2.1 General

The telecommunications server OScAR 400 is part of the OScAR family.

OScAR 400 is designed for up to 500 channels and extends the existing portfolio of OScAR 100 with
8 channels, OScAR 200 and OScAR 300.

OScAR 400 comes as a 19" installation device with 2 height unit, and is designed for the installation in a rack.

The system comes with:

- 4-core processor system with ARM-A53 cores and FPGA for functional monitoring and SSD mass storage
- Power Supply AC or DC, also at the same time (emergency power supply), low power consumption
- 2x Ethernet interfaces (10/100/1000 Mbit/s) for connectivity to the LAN
- 4x serial asynchronous interfaces RS232, RS422 (COM port, electrically isolated also among each other) for host coupling(s), e.g. host couplings to call systems
- 2x USB host interfaces to connect to a protocol printer or radio modem, and/or for connectivity of remote digital I/Os
- 1x USB device interface for link-up of a terminal emulation program (start-up functions)
- 1x connection option for remote DCF-77 receiver
- 1x relay output for process messages, with make and break contact
- 1x MARS interface
- LINUX © operating system

2.2 PBX connectivity

OScAR 400 applies voice codec G.711 A-Law or µ-Law and is connected to a PBX or softswitch with up to 500 channels with VoIP trunking via LAN interface (10/100/1000BASE-T).

2.3 Overview of OScAR 400 and peripheral components

The below picture illustrates OScAR 400 with its periphery components:

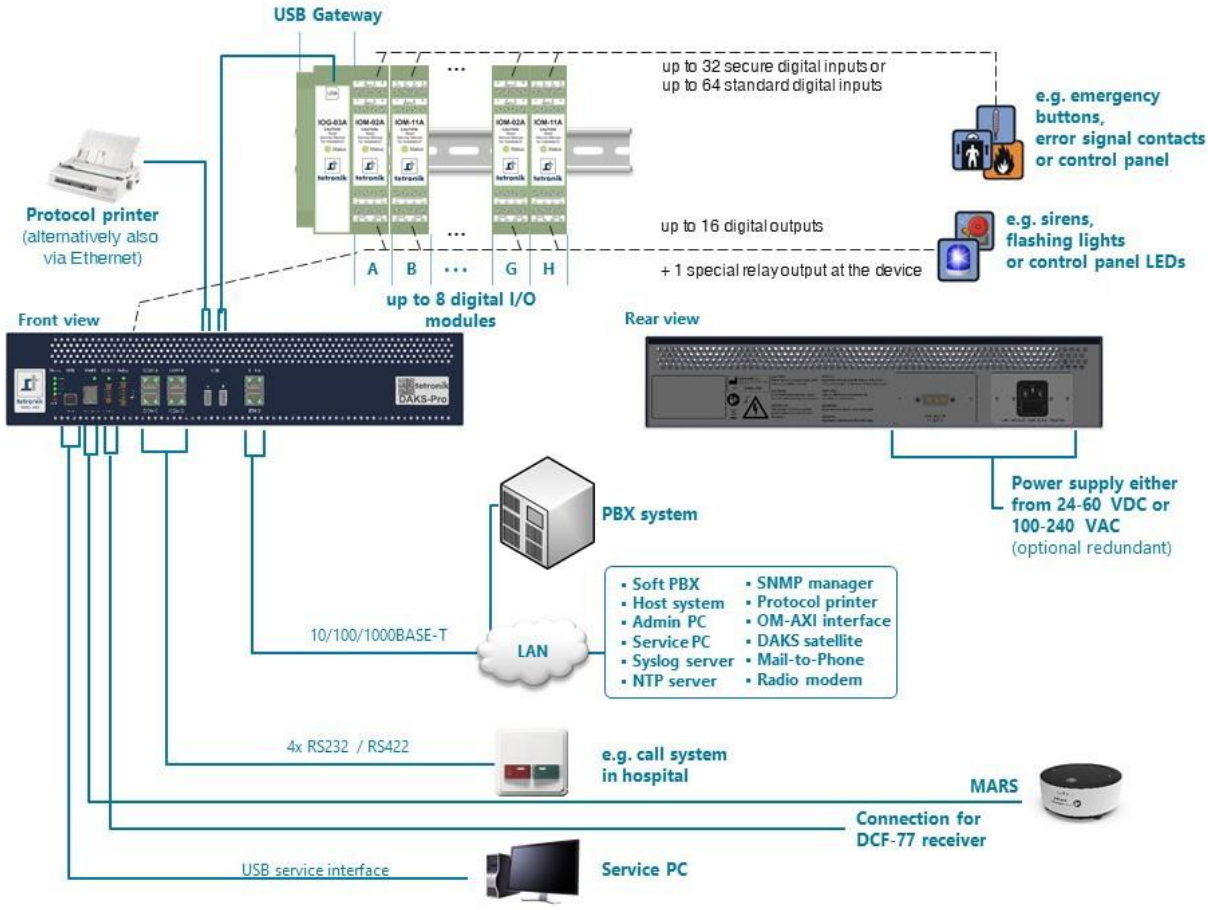


Image 2-1 Overview of OScAR 400 and peripheral components

2.4 Certifications

This device is certified in these countries in keeping with OSHA, FCC, CE and Australia RCM (country codes as in ISO 3166):

- All EU countries:
  AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK
- These countries outside the EU:
  AU, CA, CH, CO, GB, HK, ID, ME, MK, MY, NZ, PA, PH, RS, SG*, TR, US

* Singapore: Available as industrial product only

Fire Security Features and Life Safety Features were not considered during testing by a NRTL (Nationally Recognized Testing Laboratory).

2.5 Characteristics of OScAR 400

The below table lists the characteristics of OScAR 400:

Description	Value
Dimensions	• height 88 mm • width 483 mm • depth 365 mm
Weight	• max. configuration 5.5 Kg
Power supply	AC power supply • Voltage range 100 V - 240 V 50/60 Hz • Current consumption 0.33 A - 0.14 A DC power supply • Voltage range 24 V - 60 V • Current consumption 1.4 A - 0.56 A
Ventilation	Convective air cooling
Operating conditions	• Temperature: +10 °C .. +35 °C • Relative Humidity: 5 % .. 80 % (non-condensing)
Storage conditions and terms of transport	• Temperature: -20 °C .. +70 °C • Relative Humidity: 5 % .. 80 % (non-condensing)
MTBF	> 400,000 h (over a 5-year period under report)
Certifications/ Declarations of conformity and compliance	• EN 55035 • EN 55032 • EN 62368-1 • IEC 62368-1 • EN 60601-1 (partly) • EN 60601-1-2 (partly) • FCC • CE Declaration of Conformity • CB Scheme • RCM Compliance Folder

Table 2-1 OScAR 400 characteristics

2.6 Icons and lettering

The following icons and lettering can be found on OScAR 400, cables etc.:

Icons / Lettering	Description
	Name and contact details of the manufacturer

Table 2-2 OScAR 400 icons and lettering

Icons / Lettering	Description
	Month and year of the product's productions
	Obligatory inspection of the accompanying documents (ISO7010-M002)
	Connection to the supply network: Alternating Current, A.C. (IEC60417-5032) AC: Rated voltage, e.g. 100V-240V Rated supply frequency: z.B. 50/60Hz Rated electrical power consumption in ampere: e.g. 0.33A-0.14A
	Connection to the supply network: Direct Current, D.C. (IEC60417-5031) DC: Rated voltage, e.g. 24V-60V Rated electrical power consumption in ampere: e.g. 1.4A-0.56A
	The labeled product must not be disposed with household waste; a bar below the waste garbage can or a date indicates whether or when the product was "placed on the market" after August 13, 2005.
	CE marking means a marking by which the manufacturer indicates that pursuant to the Regulation (EC) No 765/2008 "...the product is in compliance with the applicable requirements set out in Community harmonization legislation providing for its affixing". (Includes RoHS 2 Conformity)
	The UL-listed recognized component mark by Underwriters Laboratories is proof that this product has been evaluated by UL to the applicable US and Canadian standards and found suitable for use in Canada and the USA.
	The FCC test mark is proof that the Federal Communications Commission has tested and evaluated this product with its own and other standards.

Table 2-2 OScAR 400 icons and lettering

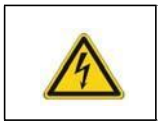
Icons / Lettering	Description
	The NRTL (Nationally Recognized Testing Laboratory) program of the OSHA (Occupational Safety & Health Administration) signals with the recognition of private organizations their qualification to test technical products according to the regulations of the US federal authority for health and safety at work. The suffix "US" stands for compliance with the requirements of the US authorities, the suffix "C" stands for compliance with the Canadian requirements.
	The RCM sign (Regulatory Compliance Mark) is proof that the product is in compliance with regulatory measures (ACMA, RSM and Australian Communications). It constitutes the registration mark for both the Australian and the New Zealand market.
	The UK Conformity Assessed (UKCA) mark is the new UK product marking required for certain products marketed in the UK (England, Wales and Scotland).

Table 2-2 OScAR 400 icons and letterin

3. Product Components

Overview

This chapter gives you an overview of the basic technical characteristics of OScAR 400.



Warning!
All external components that are connected to OScAR 400 must meet and comply with the pertinent legal provisions that are currently in force in the country in which they are operated.

Content

Product Components

3.9 General cable cords

- 3.9.1 DC power supply cable
- 3.9.2 AC connector cable Germany
- 3.9.3 AC connector cable USA
- 3.9.4 USB cable cord
- 3.9.5 Patch cable cord
- 3.9.6 RS232 data cable cord
- 3.9.7 RS-485 Adapter (ADX-42)
- 3.9.8 Connection cable MARS adapter, in-house
- 3.9.9 RJ45 test adapter

3.1 OScAR 400-components

3.1.1 Face view

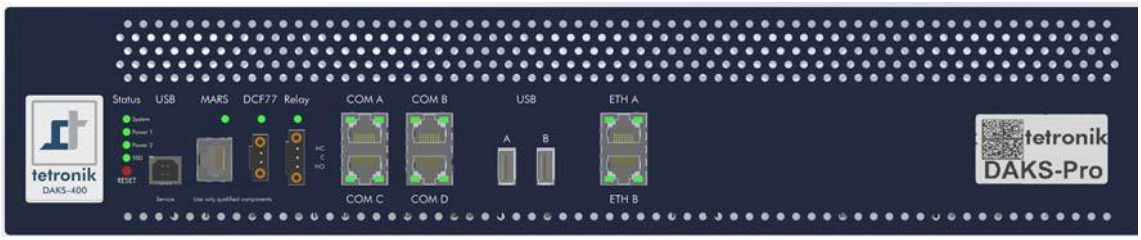


Image 3-1 Face view

3.1.1.1 Backlit logo

Image 3-2 Backlit logo

On the front of the OScAR 400, there is a backlit logo on the left side.

3.1.1.2 Electronic Paper Display

Image 3-3 Electronic Paper Display

On the right side of the front of the OScAR 400 is an EPD. On this, software-controlled static information can be displayed in a power-failure-proof manner.

3.1.2 Rear view

Image 3-4 Rear view

3.2 Attachment of components

3.2.1 Installation in 19'' rack

Image 3-5 19'' bracket for rack mounting

Remove the four lateral front housing screws (pan-head screws). Screw the two mounting brackets - as shown in the picture - to the side of the housing using the four countersunk screws supplied.

3.2.2 Set up as a tabletop unit

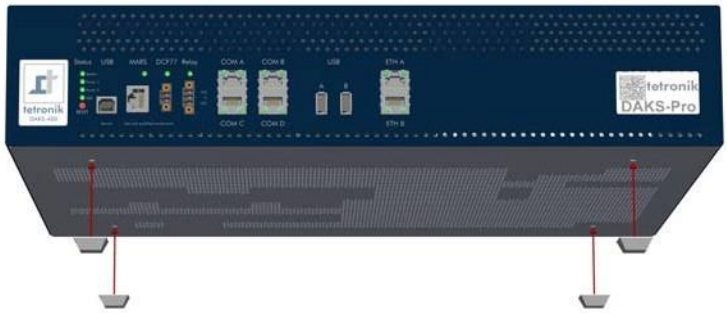


Image 3-6 Feet for table set ups

Remove the protective film from the self-adhesive feet. Stick the four self-adhesive feet to the bottom of the unit as shown in the picture.

3.3 Rear connections

3.3.1 Power supply AC

Image 3-7 Power supply AC

Element	Description
AC	IEC jack for an IEC inlet connector for non-heating apparatus to connect OScAR 400 to the mains power supply Technical details: • Input voltage 100 ... 240 V AC; 50/60 Hz • Power consumption approx. 33W

Table 3-1 Power supply AC

3.3.2 Power supply DC

Image 3-8 Power supply DC

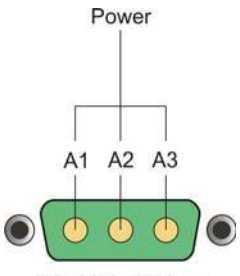
Element	Description
DC	Pin assignment:  A1: - DC A2: GND A3: + DC Technical details: • Voltage range 24 .. 60 V DC (SELV) • Power consumption approx. 33 W

Table 3-2 Power supply DC

3.4 Front connections

3.4.1 Relay contacts

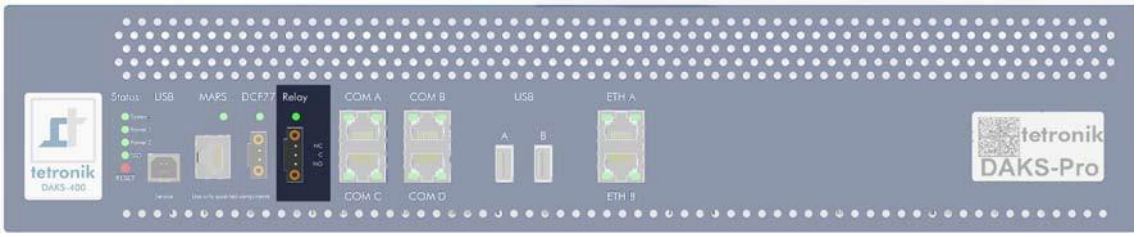


Image 3-9 Relay contacts

Element	Description
Relay	Pin assignment:  Pin 1: NO Pin 2: COM Pin 3: NC Technical details: • U_{max} 60 V AC • I_{max} 1 A • P_{max} 30 W

Table 3-3 Relay contacts

3.4.2 Status indicator

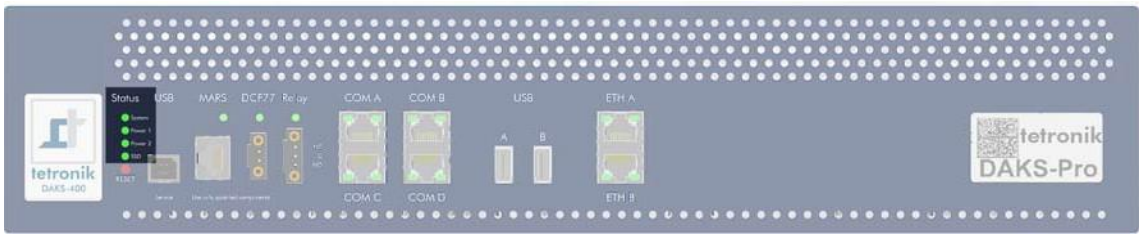


Image 3-10 Connection of the DCF receiver

Element	Description
DCF 77	Pin assignment: Pin 1: DCF receiver + Pin 2: DCF receiver - 

Table 3-4 Connection of the DCF receiver

Caution!
Only connect the DCF receiver of the type TNK:AD450 or AD650.
➢ see Section 3.6.2 "DCF-77 radio receiver"

Caution!
Wrong wiring can lead to irreversible damage or destruction of OScAR 400.

3.4.3 Reset button

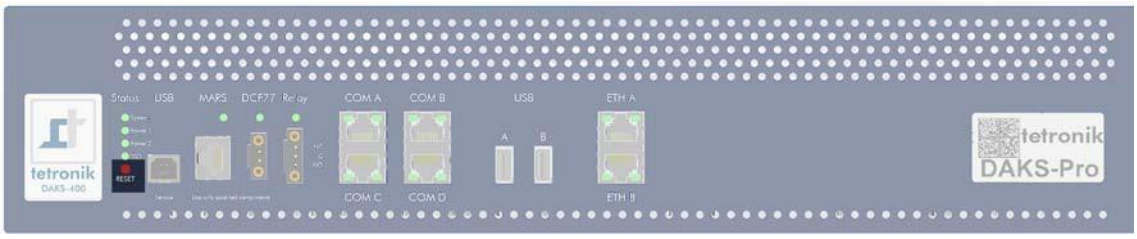


Image 3-11 Reset button

Element	Description
RESET	Reset button to reset OScAR 400

Table 3-5 Reset button

3.4.4 Connection of the DCF receiver

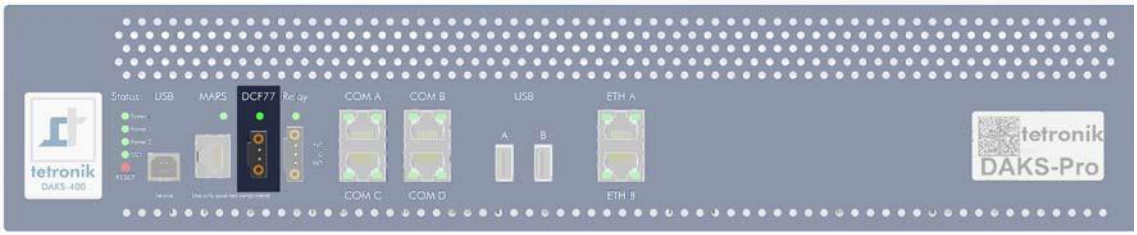


Image 3-12 Status indicator

LED	Signal	Beschreibung
System	off	currentless
	geen	OK
	red	Error / RESET
Note: For other color and flashing combinations, see the Application Manual.		
Power 1	off	No power supply or currentless
	green	OK
	red	Error: Undervoltage
Power 2	off	No power supply or currentless
	green	OK
	red	Error: Undervoltage
SSD	off	No data access
	green flashing	SSD access

Table 3-6 Status indicator

3.4.5 Ethernet interfaces

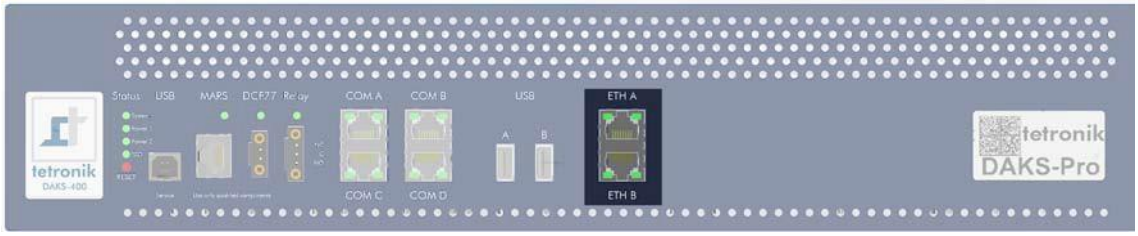


Image 3-13 Ethernet interfaces

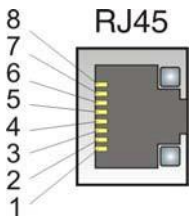
Element	Description
ETH A ETH B	RJ45 socket for connectivity to the LAN (10-,100-,1000-Base-T) Pin assignment:  Pin 1: D1+ Pin 2: D1- Pin 3: D2+ Pin 4: D3+ Pin 5: D3- Pin 6: D2- Pin 7: D4+ Pin 8: D4-
LED left	Data rate of the Ethernet interface: • off: No link • 1x green flashing: 10 Mbit/s • 2x green flashing: 100 Mbit/s • 3x green flashing: 1000 Mbit/s
LED right	Link and activity of the Ethernet interface: • off: Link 10 Mbit/s • green flashing: Link 100 Mbit/s

Table 3-7 Ethernet interface

3.4.6 COM interfaces

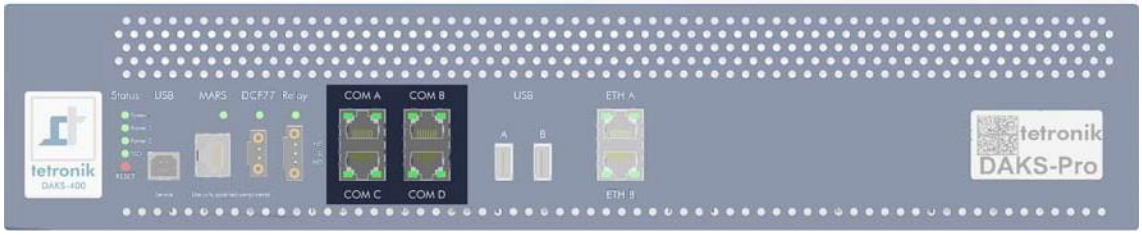


Image 3-14 COM interfaces

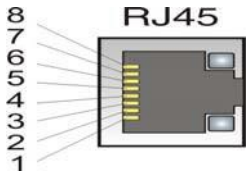
Element	Description
COM A COM B COM C COM D	RJ45 jack for connectivity to external serial expansions (electrically isolated): • RS232 • RS422 • RS485 (via Adapter ADX-42) Pin assignment:  **RS232** **RS422** Pin 1: n. c. n. c. Pin 2: RTS Tx+/Y Pin 3: GND GND Pin 4: TxD Tx-/Z Pin 5: RxD Rx+/A Pin 6: n. c. n. c. Pin 7: CTS Rx-/B Pin 8: DTR n. c.
LED TX (left)	Status indicator: • Universal LED • Standard function: TxD (green for data transfer) • Tx flashes green when outbound data traffic is active
LED RX (right)	Status indicator: • Universal LED • Standard function: RxD (green for data transfer) • Rx flashes green when inbound data traffic is active

Table 3-8 COM interface

3.4.7 USB device interfaces for service

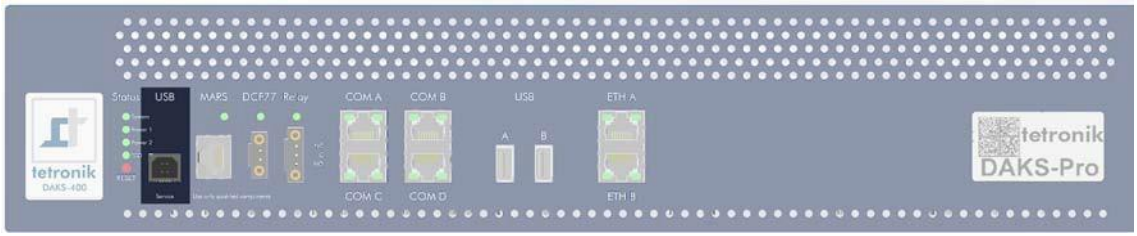


Image 3-15 USB-Service interface

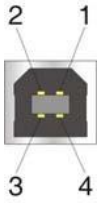
Element	Description
USB service	USB plug type B: Pin assignment:  • Pin 1: V_{Bus} • Pin 2: D- • Pin 3: D+ • Pin 4: GND

Table 3-9 USB service interface

Caution!
Before you connect OScAR 400 to a service PC, make sure you have installed the proper USB driver first.
➢ see "User Manual"

Caution!
For the operation with the USB port, OScAR 400 requires an external power supply.

The USB-Service Interface can NOT be user as power or voltage supply for OScAR 400.

➢ see Section 3.3.1 "Power supply AC"
➢ see Section 3.3.2 "Power supply DC"

3.4.8 USB host interfaces

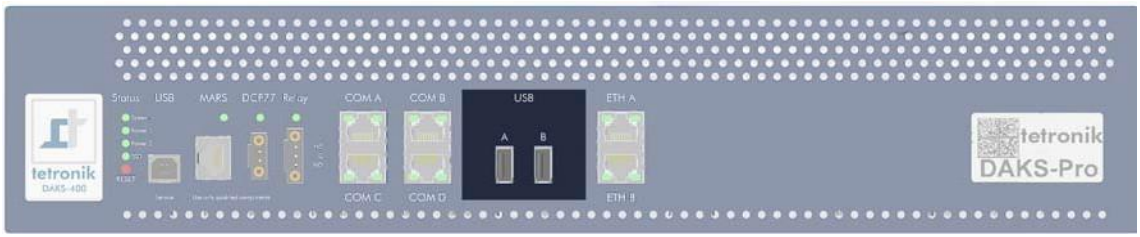


Image 3-16 USB host interfaces

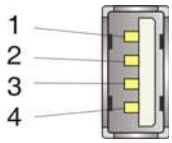
Element	Description
USB A USB B	USB plug type A: Pin assignment:  • Pin 1: V_{Bus} • Pin 2: D- • Pin 3: D+ • Pin 4: GND Technical details: • U_{max} 5 V DC • I_{max} 500 mA per interface

Table 3-10 USB host interface

3.5 Last fault signaller MARS (= Major-Alarm-Remote-Signaller)

3.5.1 Functionality

- Visual and audible fault message (red LEDs and sound signaller) in case of:
  - OScAR malfunction
  - power failure
  - line break (between OScAR server and remote MARS signaling unit)
- Time-limited loud and clearly visible main fault signaling (30 min. long) with immediate silencing option by button press, followed by fault reminder signaling
- Automatic reactivation after fault removal
- Power supply normally from OScAR server (2-wire line for power supply and error message with max. line length of 500 m); in case of power failure power supply from internal lithium battery
- Status output "Device active and external power supply okay" via green LED
- Low battery warning via red LEDs and sound signaling
- Test function by keystroke
- Small round design (like a fire detector)
- Wall installation (surface mount with magnetic holder) or table placement (with rubber stands)

3.5.2 Product component MARS Signaling Module

- **Order number:** TNK:MARS-S
- **Function:** Reception of the okay or fault signal incl. power supply from the MARS adapter and intelligent fault signaling with test function and emergency power supply via LEDs and sound signaling device.

Image 3-17 MARS signaling module

3.5.3 Wiring

Note:

Wiring plan:

➢ see Section 5.10 "MARS Error Signaling"

The connection between OScAR 400-MARS interface and MARS-S is made by up to 500m long two-wire line, usually by patch cable K-CAT6-0300, RJ45 socket (TNK:UAE8AP), in-house ca- bling and RJ45 socket (TNK:UAE8AP) on MARS-S side. Alternatively, or for testing purposes, MARS-S can be connected directly to OScAR 400.

3.5.4 MARS-S functionality in detail

In the initial state "Initialization" (duration approx. 3s) the red LEDs are off and there is no sound signal. Here, the green LED flashes (0.5s on / 0.5s off).

In all other states (except during initialization):

- the green LED is on when remote power is present from the OScAR 400 side,
- the green LED is off when MARS-S is powered from the internal battery.

If the Okay pulse pattern sent by OScAR 400 is detected, MARS-S changes to the "Okay" state; the red LEDs are off and no sound signal is generated.

To test the alarm signaling, the button must be held down in the "Okay" state. LED and sound signaling are the same as in the "Alarm" state (see below), i.e. the red LEDs and the sound signal are alternately on for 0.5s and off for 0.5s. If the button is released, MARS-S changes to the "Initialization" state (see above).

If the battery voltage is too low in the "Okay" state, there is a short acoustic signal every 30s and the red LEDs flash.

If the pulse pattern of OScAR 400 is not present, MARS-S changes to the "Alarm" state; the red LEDs and the sound signal are alternately on for 0.5s and off for 0.5s.

After 30min "Alarm" MARS-S changes to the state "Alarm timeout". The signals of the red LEDs and the sound signal are shortened to 0.1s, i.e. the red LEDs flash to 0.1s on → 0.9s off and a sound signal 0.5s off → 0.1s on → 0.4s off is generated.

If the button is pressed in the "Alarm" or "Alarm timeout" state, MARS-S changes to the "Alarm confirmed" state. The red LEDs flash (0.1s on → 0.9s off) and the sound signal is off.

The following table describes the behavior of LEDs and sound signalers:

Green LED	Red LED	Audio signalizer	Meaning
off	off	off	Two Options: • Battery discharged or not present and no external power supply from OScAR 400 or • MARS-S defective
0.5s on / 0.5s off	off	off	Initialization (after power-up or test)
on	off	off	OScAR server status okay and battery okay
on	every 30s short signal	every 30s short signal	OScAR server status okay but battery weak
on	-	-	External power supply from OScAR 400
available. off	-	-	Power supply from internal battery.

Table 3-11 Performance of LEDs and sound signalers

Green LED	Red LED	Audio signalizer	Meaning
on / off	0.5s on / 0.5s off	0.5s off / 0.5s on	Alarm, OScAR server state not okay, or test mode, i.e. with OScAR server state okay the button is pressed.
on / off	0.1s on / 0.9s off	0.5s off / 0.1s on / 0.4s off	Alarm pending for more than 30 min, OScAR server state not okay.
on / off	0.1s on / 0.9s off	off	Alarm confirmed by push button, OScAR server state not okay.

Table 3-11 Performance of LEDs and sound signalers

3.5.5 Handling of batteries and storage of the MARS

For MARS-S use 3V lithium batteries TYPE CR123(A), CR17335 or CR17345 with a capacity of 1300mAh.

Caution!
Replacing the lithium battery with an incorrect type can damage or destroy the device and poses a risk of explosion or leakage of flammable liquids or gases.

Caution!
Reversing the polarity of the lithium battery during installation can lead to damage to or destruction of the device, an explosion or the escape of flammable liquids or gases.

Caution!
Disposing of the lithium battery in fire or a hot oven may cause an explosion.

Caution!
Mechanical crushing or cutting of the lithium battery may cause an explosion.

Caution!
Lithium batteries exposed to extremely high temperatures may explode or flammable liquids or gases may escape.

Caution!
Lithium batteries exposed to extremely low air pressure may explode or flammable liquids or gases may escape.

3.6 Add ons

3.6.1 Digital I/O

Caution!
The IOG Modules are available in the versions IOG-03, IOG-03A and IOG-11A.
The IOM Modules are available in the versions IOM-02, IOM-11, IOM-02A, and IOM-11A.
Note that you may only connect the IOM-02 and IOM-11 modules to the IOG-03 module.
Note that you may only connect the IOM-02A and IOM-11A modules to the IOG-03A and IOG-11A modules.
Failure to follow these instructions can result in malfunctions.

3.6.1.1 Gateway

- **Order number:** TNK:IOG-03 or IOG-03A
- **Function:** Gateway to connect the IOM boards
  ➤ see Section 3.6.1.3 "I/O Module Standard"
  ➤ see Section 3.6.1.4 "I/O Module Secure"

Technical details:

Module	Element	Description
	USB	• Jack Type B • Connection to OScAR 400 via USB cable ➤ see Section 3.9.4 "USB cable cord"
	Status	Status indicator: • OFF — no voltage • red — no communication between Gateway and OScAR 400 for over 2 s • yellow — currently booting and self-test • green — OK

Table 3-12 Gateway for USB connection

Caution!
Before you plug in (connect) or disconnect the IOG and IOM modules, always make sure you cut the connection to OScAR 400 first.
➤ see Section 3.6.1.3 "I/O Module Standard"
➤ see Section 3.6.1.4 "I/O Module Secure"

3.6.1.2 Gateway RS-485

- **Order number:** TNK:IOG-11A
- **Function:** Gateway for connection via RS-485 interface

Technical details:

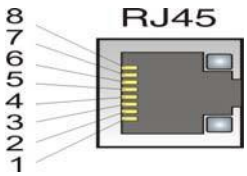
Module	Element	Description
	U+ / U-	Power supply: • 8 .. 30V DC • > 6W
	RS-485	• Socket RJ-45 • Connection to the serial interface of the OScAR server via RS-485 connection adapter LAN cable and, if necessary (in case of detached mounting), junction box with in-house cabling and additional LAN cable. • The max. cable length between the OScAR server and the last IOG-11A module must not exceed 1000 m. • Bus connection, up to eight IOG-11A modules can be connected to one serial interface of the OScAR server. **Pin assignment:** **RS-485**  Pin 1: Pin 2: Pin 3: Pin 4: Pin 5: Pin 6: Pin 7: A+ Pin 8: B-
	Status	Status indicator: • off — No voltage • red — No data traffic between OScAR server and gateway • red flashing — no valid data traffic between OScAR server and gateway • yellow — valid traffic, but not explicitly for the address from this gateway • green/ yellow flashing — Incorrect VCON configuration of the IOM modules in the OScAR server • green — OK, within the last 2s there was a communication with this gateway • green flashing — OK, data traffic on the bus

Table 3-13 Gateway for RS-485

Module	Element	Description
	Prog.	Configuration of the bus address of the IOG-11A module: You will need a thin object, such as a paper clip, to set it. • **Long Press (>5 s):** Puts the module into programming mode (7-segment display flashes) • **Short Press:** Changes the bus address of the module from ‚0' to ‚8' and then from ‚1.' to ‚8.'. (Address ‚0' = module is out of service) – **Address:** ‚1' to ‚8.' = termination resistor not activated ‚1.' to ‚8.' = termination resistor activated **Note:** **At the last module in the chain (greatest distance to the OScAR server) the built-in termination resistor must be activated.** • **Repeated long press (>5 s):** Puts the module back into working mode (7-segment display no longer flashes)
	Address	• Display of the currently set module address • Set decimal point indicates activated termination resistor **Note:** An address can only be assigned once per bus line.

Table 3-13 Gateway for RS-485

3.6.1.3 I/O Module Standard

- **Order number**: TNK:IOM-02 or IOM-02A

Function: Connection for 8 digital signals without short circuit or line break detection, and 2 digital outputs

Technical details:

Module	Element	Description
	U- U- U- U- (internally connected)	GND (per IOM module)
	INPUT 1..8	Digital inputs (per IOM module) • electrically isolated • common negative pole • R_{IN} 15 kΩ • Internal feeding 12 V DC
	OUT 1a, 1b, 2a, 2b	Digital outputs • electrically isolated, also from one another • U_{max} 60 V • I_{max} 100 mA • R_{ON} 11 Ω
	Status	Status indicator • OFF no voltage • red no communication between the I/O module (IOM) and the Gateway (IOG) • green OK

Table 3-14 I/O Module Standard

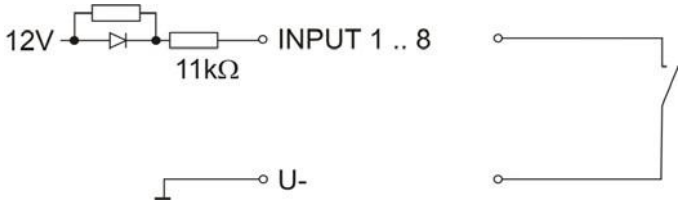


Image 3-18 Digital input wiring: Utilization of the internal voltage source, contact switching to minus

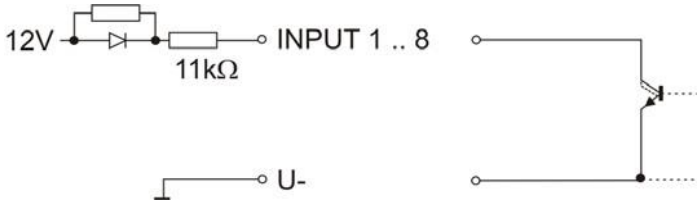


Image 3-19 Digital input wiring: Utilization of the internal voltage source, Open Collector

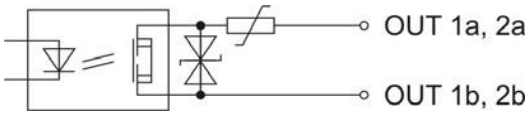


Image 3-20 Wiring of the digital outputs

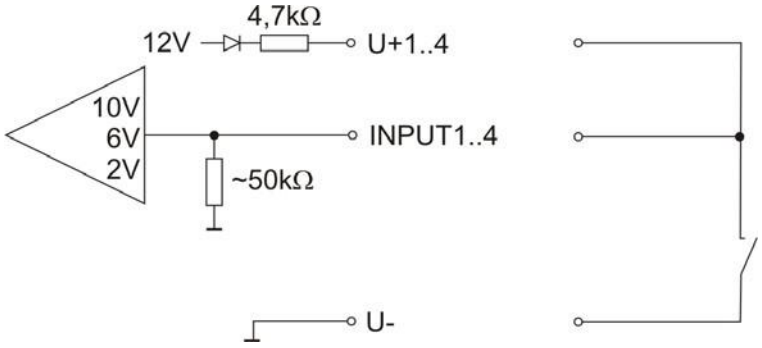
3.6.1.4 I/O Module Secure

- **Order number:** TNK:IOM-11 or IOM-11A
- **Function:** Connection for 4 digital signals with short circuit- and line break detection, and 2 digital outputs

Technical details:

Module	Element	Description
	U+ 1..4	Power supplies • U 12 V • R_{int} 4.7 kΩ
	U- U- U- U- (internally connected)	GND (per IOM module)
	INPUT 1..4	Digital inputs (per IOM module) • electrically isolated • common negative pole • Switching thresholds 2, 6 and 10V DC For short circuit and line break detection in combination with external circuitry • R_{IN} 15 kΩ • Feeding Internal feed 12 V DC or external feed U_{max} 60 V DC
	OUT 1a, 1b, 2a, 2b	Digital outputs • electrically isolated, also from one another • U_{max} 60 V DC • I_{max} 100 mA • R_{ON} 11 Ω
	Status	Status indicator • OFF no voltage • red no communication between I/O module (IOM) and Gateway (IOG) • green OK

Table 3-15 I/O Module Secure



Note:
IOM-11 input is high impedance, possibly R necessary= 5/12/24..60 V

Image 3-21 Digital input wiring: Utilization of the internal voltage source, contact switching to minus, without line break detection

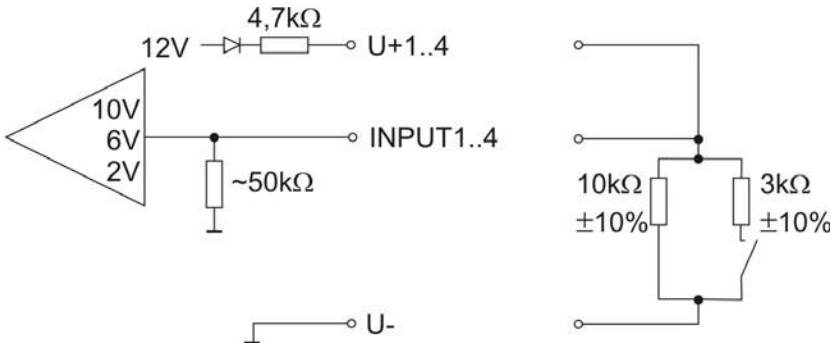
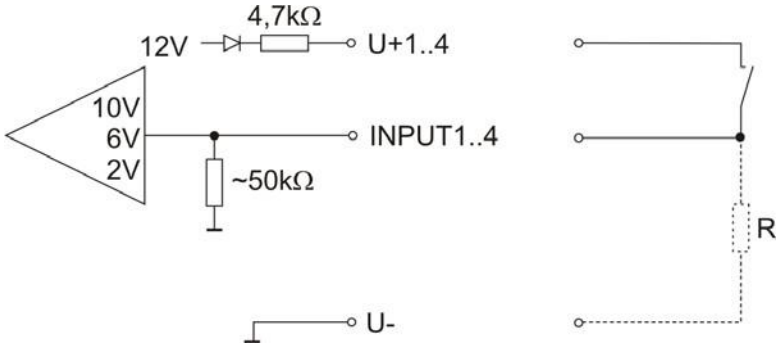


Image 3-22 Digital input wiring: Utilization of the internal voltage source, contact switching to minus, with line break detection



Note:
IOM-11 input is high impedance, if needed apply R~10kΩ

Image 3-23 Digital input wiring: Utilization of the internal voltage source, contact switching to plus, without line break detection

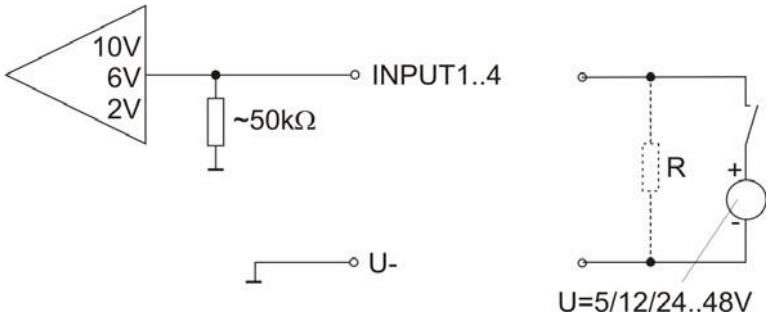


Image 3-24 Digital input wiring: Utilization of an external voltage source

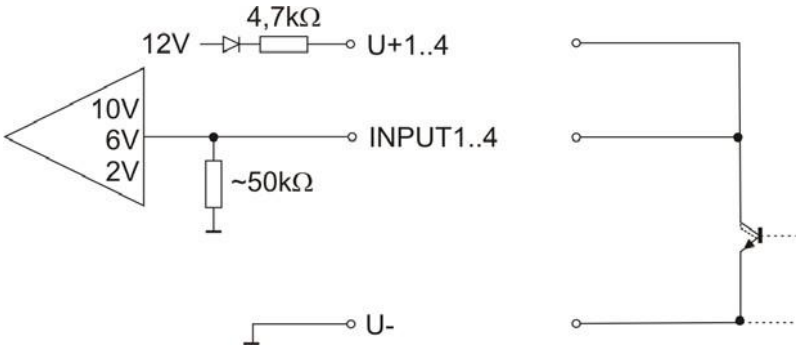
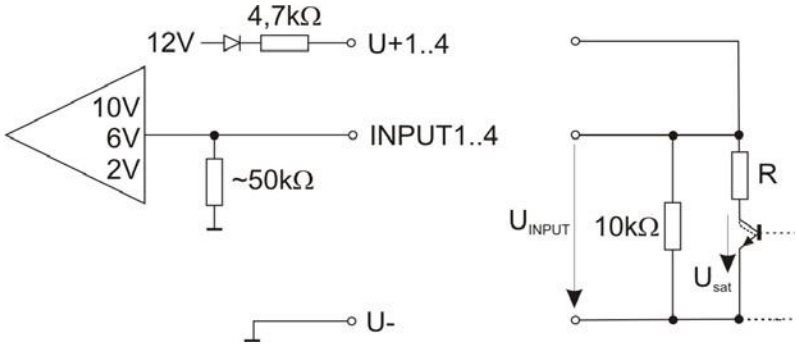


Image 3-25 Digital input wiring: Utilization of the internal voltage source, Open Collector without monitoring



Note:
Dimensioning of R
(U_{INPUT} = 4V)

$$R = \frac{4V - Usat}{1{,}33mA}$$

Image 3-26 Digital input wiring: Utilization of the internal voltage source, Open Collector with monitoring

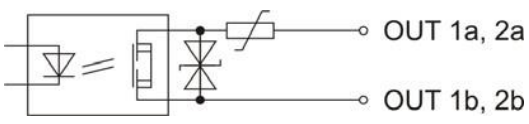


Image 3-27 Wiring of the digital outputs

3.6.2 DCF-77 radio receiver

- Order number: TNK:AD450 or AD650
- Function: Radio receiver to synchronize OScAR 400 with the statutory time of Germany

Technical details:

- Measurements: Length 65 mm; Depth 35 mm; Height 90 mm (with connection plate)
- Cable length: 10 m
- Cable extension: max. 200 m

  Cable properties: 2-wire twisted pair cable cord, minimum cross section 2 x 0.25 mm²

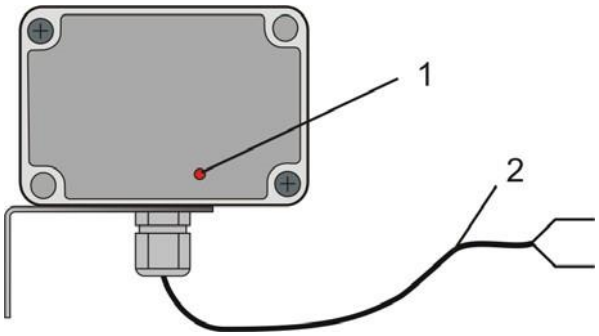


Image 3-28 AD450 or AD650: DCF-77 radio receiver

Element	Description
1	Status indicator: • OFF — No power supply from the connection cable • Blinking 1x per s — Good radio reception • Flickering — Interference of the radio reception
2	Connection cable open at both ends for connectivity to OScAR 400. ➢ see Section 3.4.2 "Connection of the DCF receiver"

Table 3-16 AD450 or AD650: DCF-77 radio receiver

Please follow the below instructions when you install the DCF-77 radio receiver:

- Mount the apparatus as high up as possible and not in buildings with exterior walls that are highly insulated and shielded, nor in buildings with a metallic roof construction.
- Minimum distance from sources of interference 2-3 m.
- Mount the reception housing horizontally.
- If necessary, shorten the connection cable to avoid an antenna effect.
- After the connection is made and the receiver is adjusted, wait 30 seconds before assessing the radio reception.

3.7 Line extensions

3.7.1 CSA converter

- **Order number:** TNK:CSA-01
- **Function:** To convert an RS-422 interface into an RS-232 interface
  ➤ see Section 5.6 "Line extension of the COM interface"

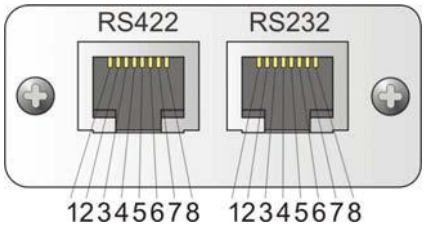


Image 3-29 The CSA-Converter

Pin assignment RS422:	Pin 1:	n. c.
	Pin 2:	Rx+/A
	Pin 3:	GND
	Pin 4:	Rx-/B
	Pin 5:	Tx+/Y
	Pin 6:	n. c.
	Pin 7:	Tx-/Z
	Pin 8:	n. c.
Pin assignment RS232:	Pin 1:	DSR
	Pin 2:	RTS
	Pin 3:	GND
	Pin 4:	TxD
	Pin 5:	RxD
	Pin 6:	DCD
	Pin 7:	CTS
	Pin 8:	DTR

Note:
The CSA converter is powered through the RS-232 connection and requires no further electric power supply. Make sure the handshake lines are connected at the RS-232 device (host, modem).

3.7.2 SMS radio modem

- **Order number:** TNK:FM-SMS4G-1K
- **Function:** Dispatch of SMS messages via GSM modem

Note:
For further details on how to use the dialing modem please see the User Manual.

3.7.3 Transmission kit for OScAR 400 to printer

- **Order number:** TNK:V2X-90-WPZ104
- **Function:** Connection on the side of OScAR 400, to link-up a printer to OScAR 400 via the USB/RS232 interface through a line ex- tension

➤ see Section 3.7 "Line extensions"

Technical details:

- Cable length: 10 m

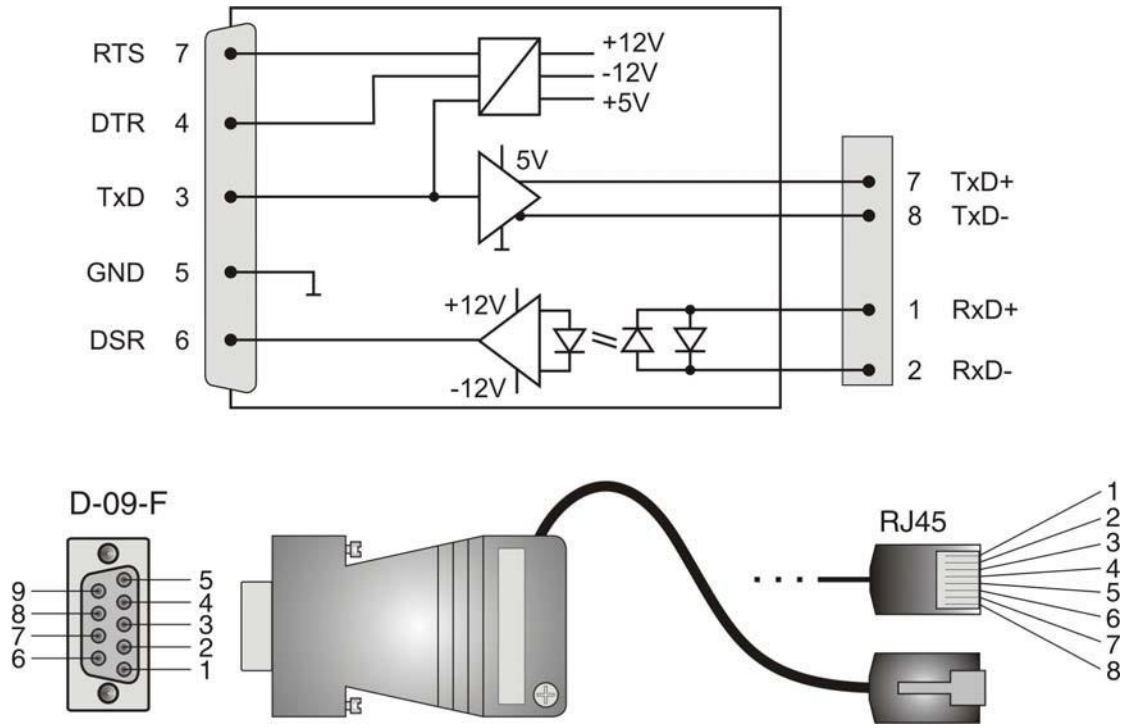


Image 3-30 Transmission kit for OScAR 400 to Printer

3.7.4 Transmission kit for printer

- **Order number:** TNK:VX2-WPZ104
- **Function:** Connection on the side of the printer, to link-up a printer to OScAR 400 via the USB/RS232 interface through a line ex- tension

➤see Section 3.7 "Line extensions"

Technical details:

- Cable length: 5 m

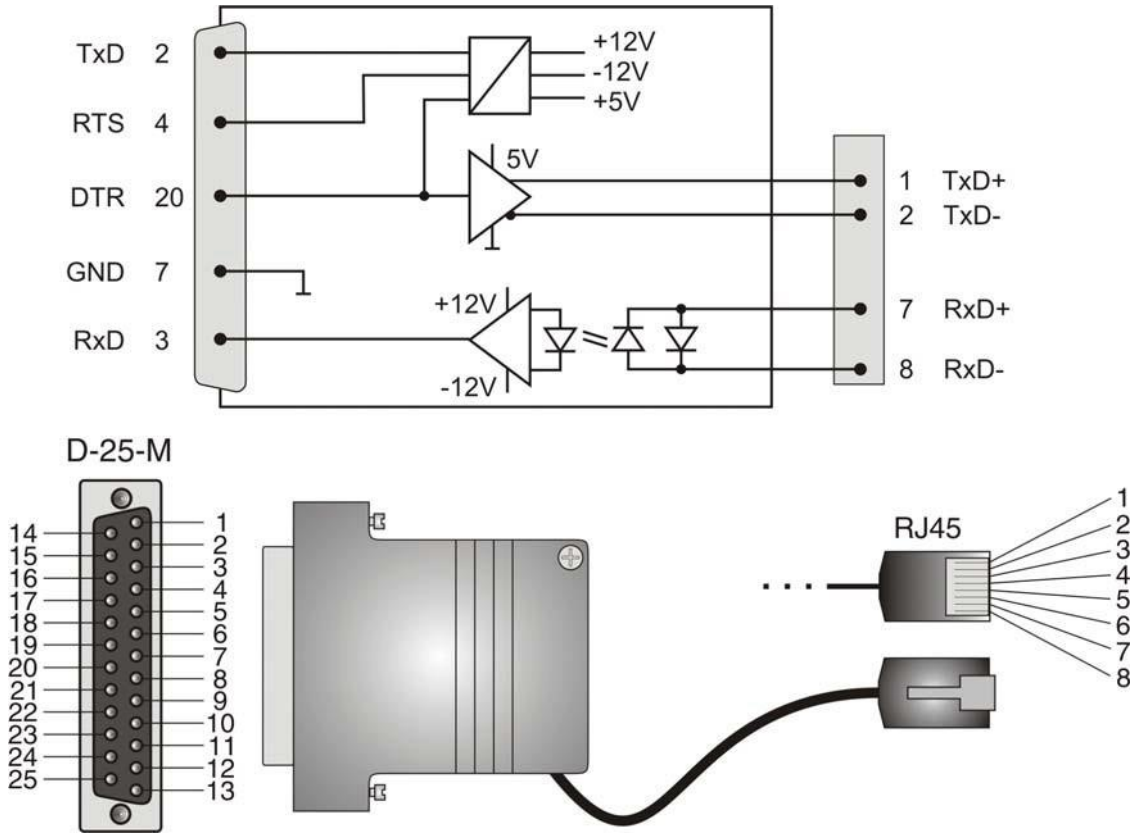


Image 3-31 Transmission kit for printer

3.8 General adapters

3.8.1 DCE adapter

- **Order number:** TNK:A-DCE-01
- **Function:** Adapter from RJ45 to SUB D-09-F to connect OScAR 400 to a DTE (for example to a PC), with local handshake
  ➤see Chapter 5, "Wiring Plans"

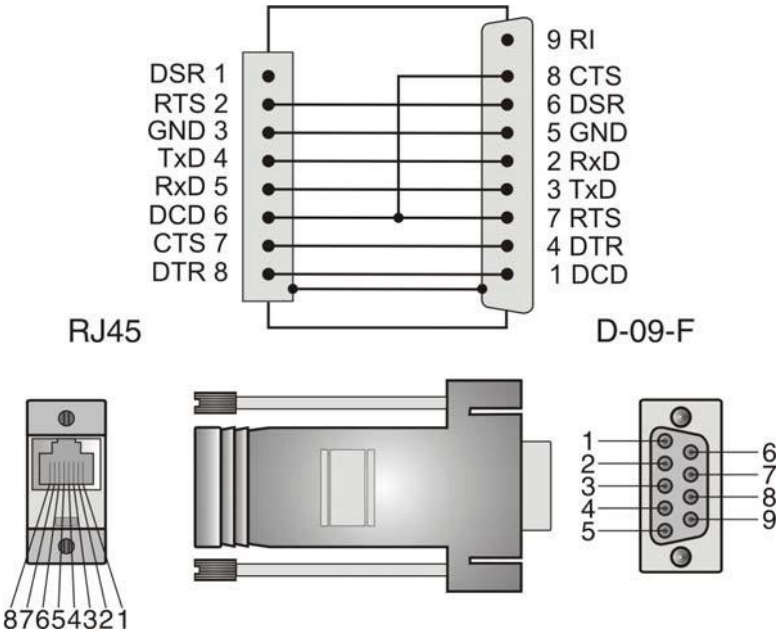


Image 3-32 DCE adapter with a local handshake

3.8.2 DTE adapter

- **Order number:** TNK:A-DTE-01
- **Function:** Adapter from RJ45 to SUB D-09-M to connect OScAR 400 to a DCE, e.g. a modem
  ➤see Chapter 5, "Wiring Plans"

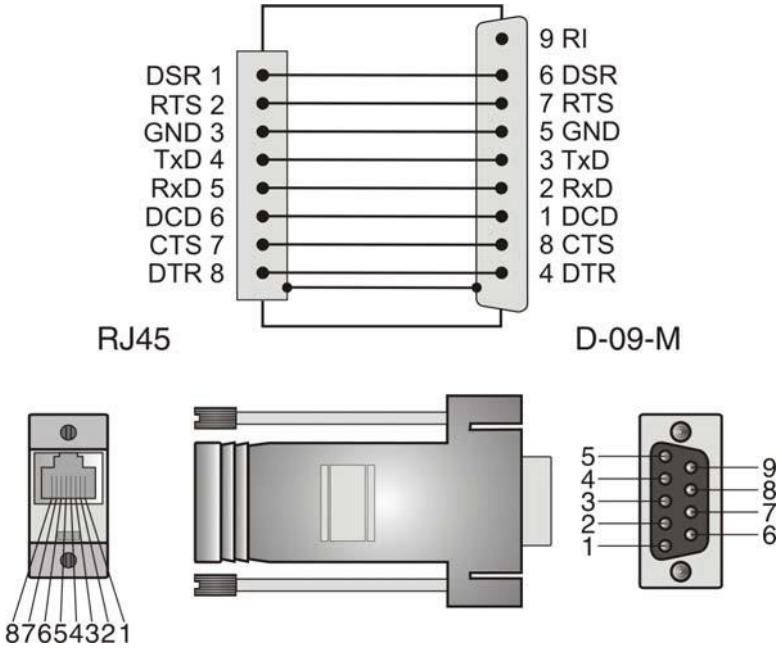


Image 3-33 DTE adapter

3.8.3 Single outlet line jack unit RS422 (unshielded)

- **Order number:** TNK:UAE8AP
- **Function:** The single socket is used for line extension via RS422 or for connection of MARS-S is used
  ➤see Section 5.6 "Line extension of the COM interface".
  ➤see Section 5.10 "MARS Error Signaling"

The Pin assignment of the RJ45 socket results from the interface to which it is connected.

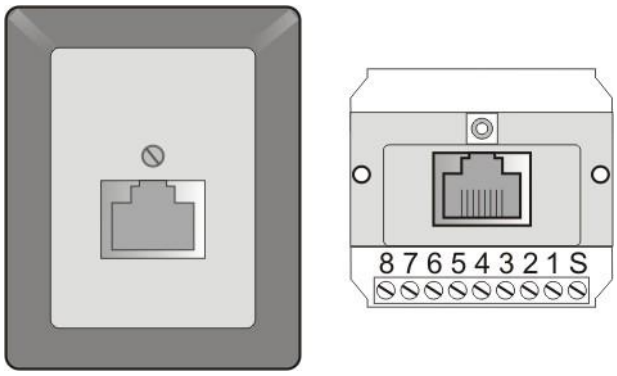


Image 3-34 Single outlet line jack unit RS422 (unshielded)

3.9 General

3.9.1 DC power

- **Order number:** TNK:K-51001-0600
- **Function:** DC connector cable for OScAR400

Technical details:

- Length 6 m

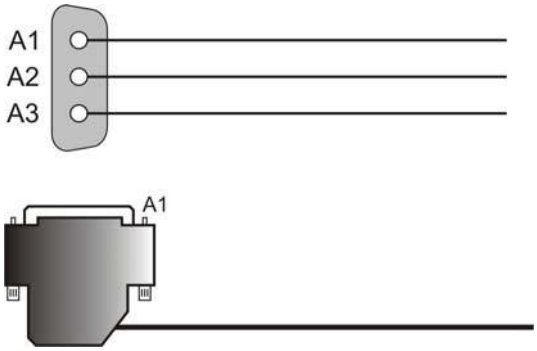


Image 3-35 DC power cord

Pin assignment:

PIN	Function	Color
A1	- DC	blue
A2	GND	green-yellow
A3	+ DC	brown

Table 3-17 DC power cord - Pin assignment

3.9.2 AC connector cable Germany

- **Order number:** TNK:K-AC-D-0200
- **Function:** AC connector cable for OScAR 400

Technical details:

- Length 2.00 m
- Connection: Plug for Germany

3.9.3 AC connector cable USA

- **Order number:** TNK:K-AC-US-0250
- **Function:** AC connector cable for OScAR 400

Technical details:

- Length 2.50 m
- Connection: Plug for USA

3.9.4 USB cable cord

- **Order number:** TNK:K-USBAB-0300
- **Function:** To connect OScAR 400 to a service PC, a digital I/O or a printer.

Technical details:

- Length 3.00 m
- Connection: Plug type A/B

3.9.5 Patch cable cord

- **Order number:** TNK:K-CAT6-0300
- **Function:** Connector cable to link up various interfaces (e.g. LAN, RS232, RS422, S_0, E1(S_{2M}), T1)

Technical details:

- Length 3.00 m
- Category: CAT6, shielded
- PIN assignment In keeping with EIA/TIA T568A or EIA/TIA T568B, resp.

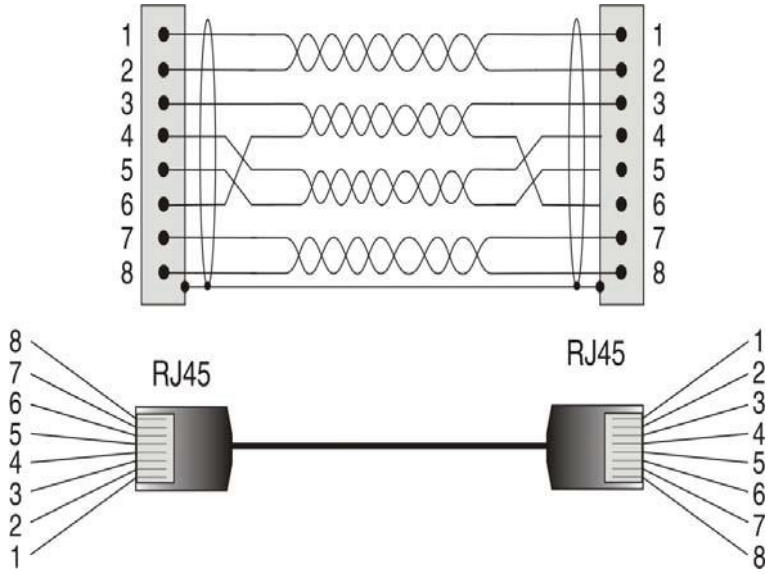


Image 3-36 Patch cable cord

3.9.6 RS232 data cable cord

- **Order number:** TNK:K-10225-0500
- **Function:** Cable cord to connect the RS232 output of the CSA converter (including the DC jack) for link-up of a power adapter (TNK:NT-CSA-0X) in order to feed the CSA converter
  ➤see Section 3.7.1 "CSA converter"

Technical details:

- Length 3 m

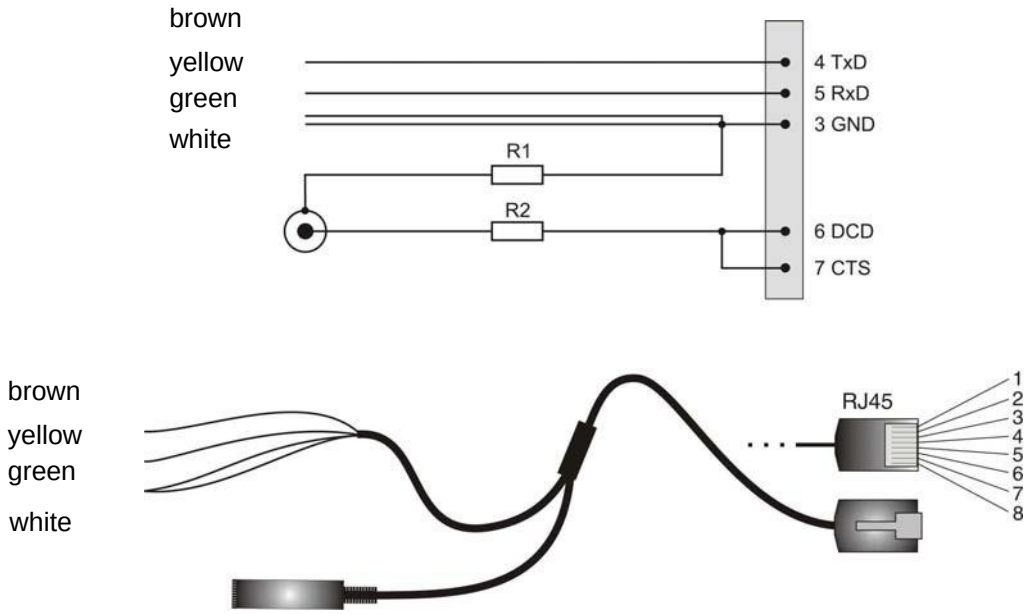


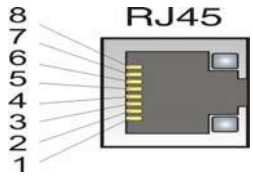
Image 3-37 RS232 data cable cord

3.9.7 RS-485 Adapter (ADX-42)

- **Order number:** TNK:A-ADX-42
- **Function:** RS-422 / RS-485 adapter including ESD protection

Caution!
The ADX-42 adapter must always be connected directly to the OScAR.

Pin assignment:



Pin 1
Pin 2
Pin 3
Pin 4
Pin 5
Pin 6
Pin 7 A+
Pin 8 B-

3.9.8 Connection cable MARS adapter, in-house

- **Order number:** K-110-8P2C-0300
- **Function:** Connection cable for MARS adapter to in-house cabling with RJ45 connector.

Technical data:

- Length: 3,00 m
- Connection: open cable ends / RJ45

3.9.9 RJ45 test adapter

- **Order number:** F195-11-0808
- **Function:** RJ45 test adapter for bridging the in-house cabling

Technische Daten:

- Connection: RJ45

4. Hardware Operations

Overview

This chapter describes the hardware operations on the server and also includes the safety instructions in German, Finnish, Danish, Swedish and Norwegian.

Content

The following areas are covered in this chapter:

4.1 General safety instructions

Note:
During testing by a NRTL (Nationally Recognized Testing Laboratory), fire safety features and life safety features were not considered.

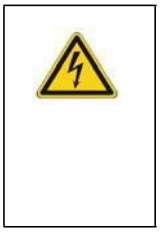
Warning!
Always make sure you read the installation instructions carefully before you connect the system to the electric power source.

Warning!
Please follow the general safety instructions and the recommended measures for ESD protection.

Warning!
OScAR 400 may not be operated in explosion-risk areas or rooms.

Warning!
During a thunderstorm, do not perform any operations on the system and do not connect or pull any cables or cords.

Warning!
The sockets labelled "ETH", "USB", "COM", "DCF", "Relay" and „MARS“ are safety switches with an extra low voltage (Safety Extra Low Voltage, SELV). Always make sure that SELV switches are only connected to other SELV switches.



Warning!
OScAR 400 is designed for operation in an EDP or lab environment and requires a surrounding that is dry, clean, well-ventilated, and air conditioned. OScAR 400 is cooled exclusively by way of convection, i.e. no fans are built into OScAR 400.
For more details on the required ambient temperature and the humidity:
➢ see Chapter 3, "Product Components".

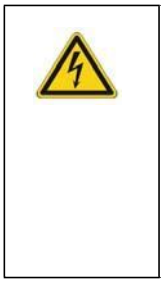
Warning!
OScAR 400 may only be repaired or serviced by the producer and with the original parts.
No components or parts of the boards may be replaced or exchanged by the user.

Warning!
This product may only be disposed in keeping with the pertinent statutory laws and regulations.

Warning!
The casing may only be opened by the trained engineers. Before the casing is opened, all power supply connections must be cut (AC and DC).

Warning!
This unit may have double pole/neutral fusing. The fuses may only be replaced by the manufacturer.

Warning!
All hardware operations at OScAR 400 must be according to the instructions in the manuals or in agreement with the technical support of tetronik GmbH!



Warning!
OScAR 400 may not be used to monitor patients while any of these processes are being performed:

- upgrades
- updates of the software
- import of licenses
- changes of the VCON parameters that require a reboot of the system

Warning!
OScAR 400 conform to the protection class I.
To avoid the risk of electric shock, this device should only be connected to a power supply with a protective earth conductor.

Note:
OScAR 400 is intended and qualified for continuous operation!

Note:
If the power plug or device plug is used as a disconnecting device, the plug must remain freely accessible.

4.2 Safety instructions for Denmark

Vigtigt!
Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.

Vigtigt!
Lederen med grøn/gul isolation må kuntilsluttes en klemme mærket (IEC 417, No. 5019) eller (IEC 417, No. 5017).
For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.

4.3 Safety instructions for Norway

Advarsel!
Apparatet må tilkoples jordet stikkontakt

4.4 Safety instructions for Finland

Varoitus!
Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

4.5 Safety instructions for Sweden

Varning!
Apparaten skall anslutas till jordat uttag.

5. Wiring Plans

Overview

This chapter covers the different wiring plans of OScAR 400.

Content

The following areas are covered in this chapter:

5.1 Power supply

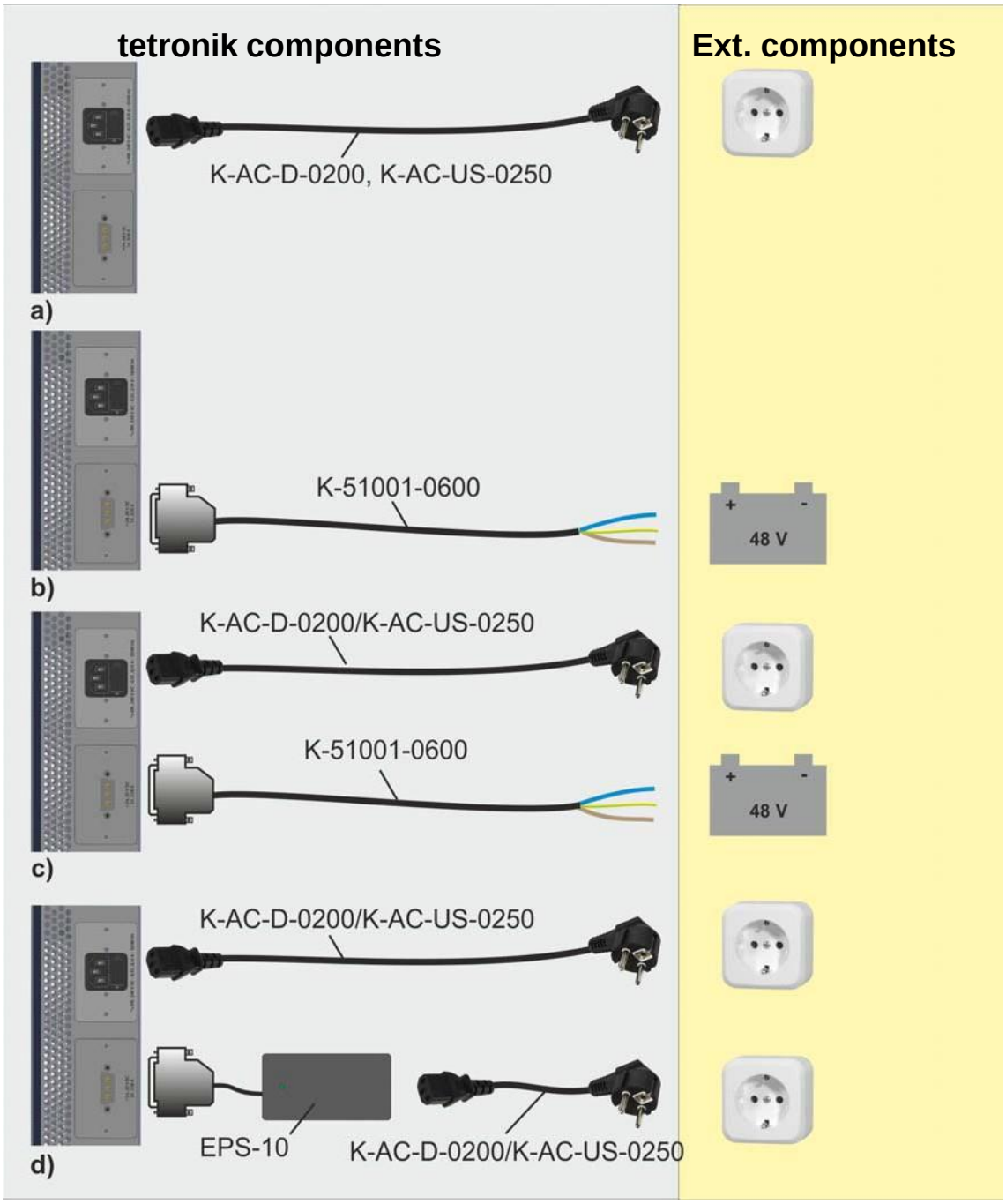


Image 5-1 Wiring plan power supply: a) only AC, b) only DC, c) AC and DC, d) AC and AC

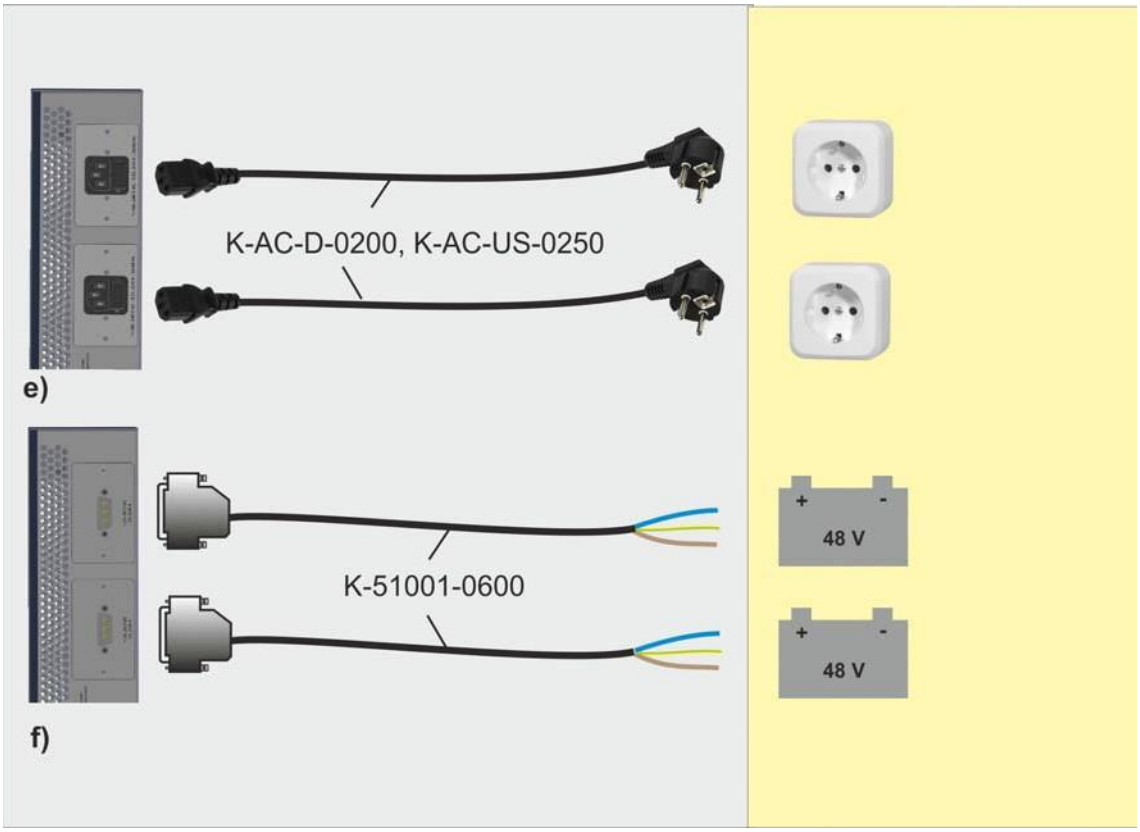


Image 5-2 Wiring plan power supply: e) AC+AC, f) DC+DC

The power supply can be AC, AC+AC, DC, DC+DC or AC+DC.

When using two power supplies, OScAR 400 takes the required energy equally from both supplies (load share). The failure of one power supply is detected by OScAR 400 and a warning can be issued.

5.2 USB device interface for service

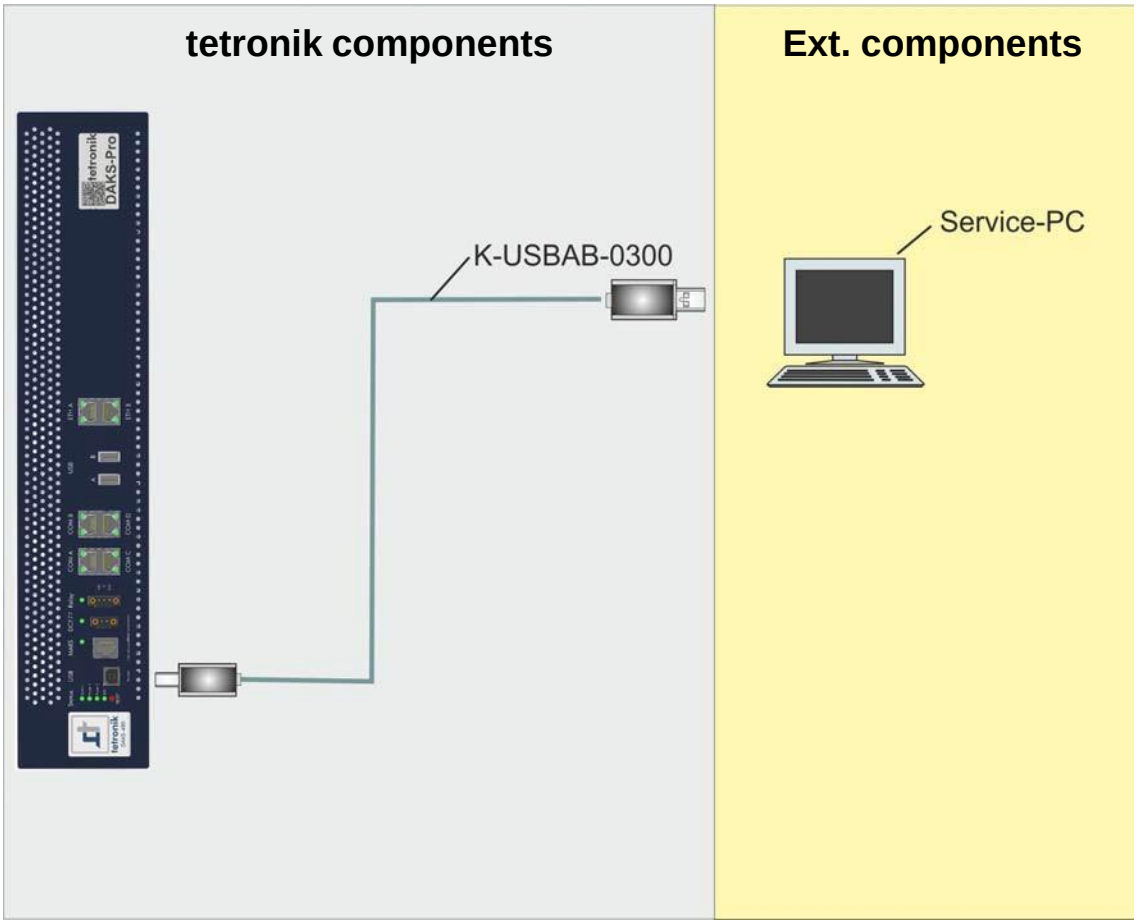


Image 5-3 USB Service wiring plan

Element	Description
K-USBAB-0300	USB cable cord
Service PC	PC with a terminal emulation program for configuration and servicing purposes

Table 5-1 USB Service wiring plan

5.3 Ethernet interface

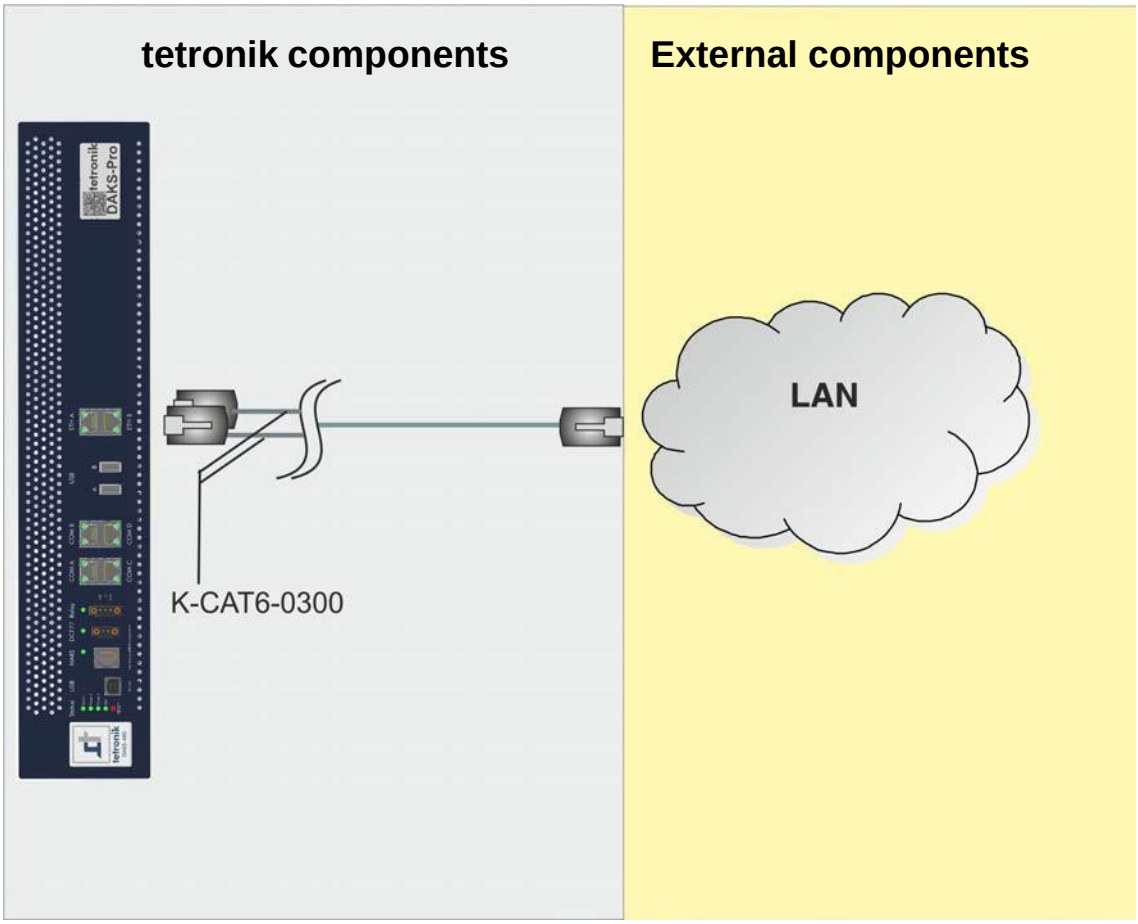


Image 5-4 Wiring plan of the Ethernet interface

Element	Description
K-CAT6-0300	Standard patch cable
LAN	Link-up of OScAR 400 to the LAN

Table 5-2 Wiring plan of the Ethernet interface

5.4 USB host interface

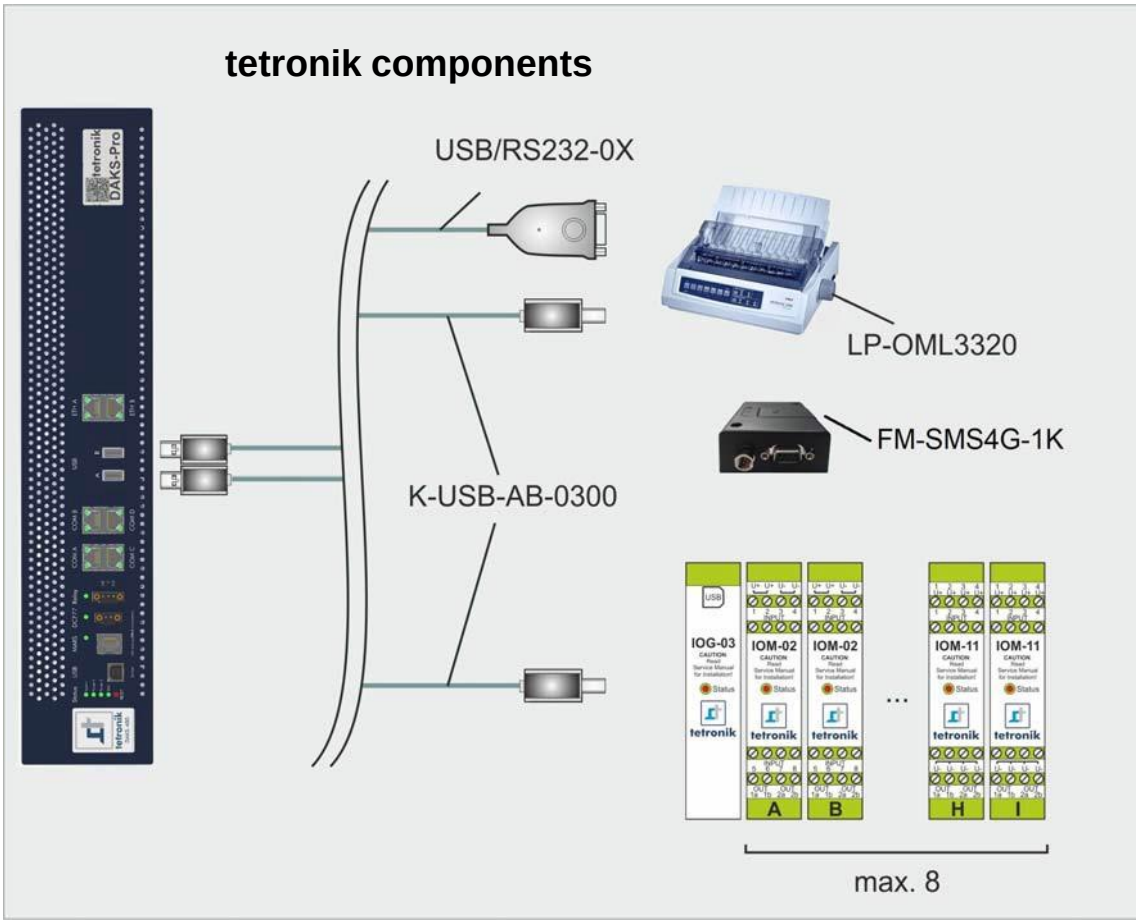


Image 5-5 Wiring plan of the USB host interface

Element	Description
K-USBAB-0300	USB connector cable
LP-OML280	Protocol printer for logging
IOG-03	Gateway for USB connection
IOM-02	I/O Module Standard
IOM-11	I/O Module Secure
USB/RS232-0X	Adapter to convert from USB to RS232
FM-SMS4G-1K	GSM-SMS-Modem

Table 5-3 Wiring plan of the USB host interface

5.5 COM interface

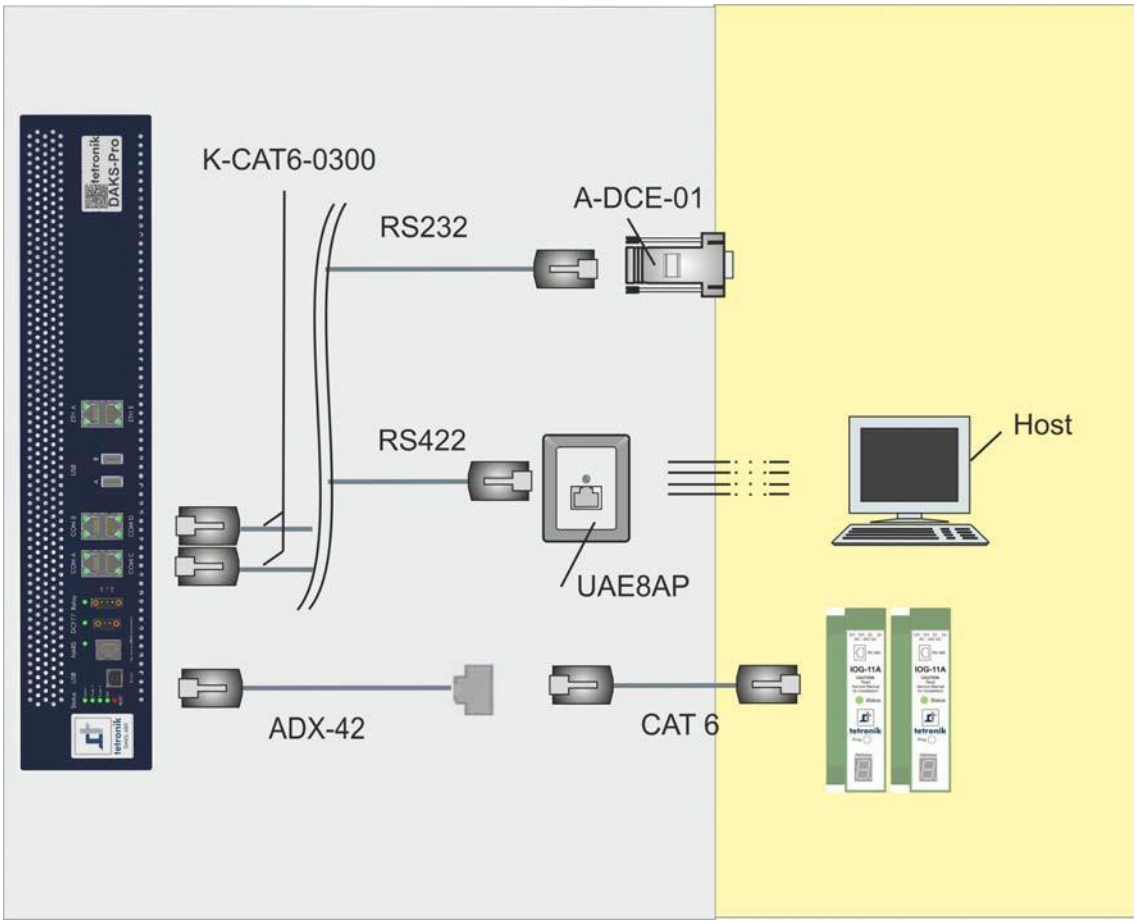


Image 5-6 Wiring plan COM interface

Warning!
For RS232 and line lengths that exceed 15 m, you need to employ a line extension of the serial connections.
➢ see Section 5.6 "Line extension of the COM interface"

Caution!
The ADX-42 adapter must always be connected directly to the OScAR.
➢ Section 3.9.7 "RS-485 Adapter (ADX-42)"

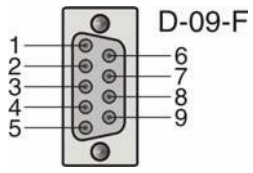
Element	Comment
K-CAT6-0300	Standard patch cable
PC/Host	Data Terminal Equipment (DTE), e.g. a nurse call system, connected either via RS232 or via RS422
A-DCE-01	Adapter to connect OScAR 400 to a DTE device  Pin 1: DCD Pin 2: RxD Pin 3: TxD Pin 4: DTR Pin 5: GND Pin 6: DSR Pin 7: RTS Pin 8: CTS Pin 9: RI

Table 5-4 Wiring plan of the COM interface

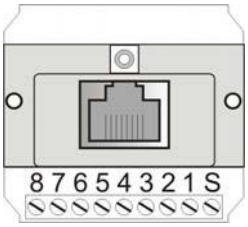
Element	Comment
UAE8AP	Socket for an RS422 interface.  Pin 2: Tx+/Y Pin 3: GND Pin 4: Tx-/Z Pin 5: Rx+/A Pin 7: Rx-/B Pin 1, 6, 8: n. c.

Table 5-4 Wiring plan of the COM interface

5.6 Line extension of the COM interface

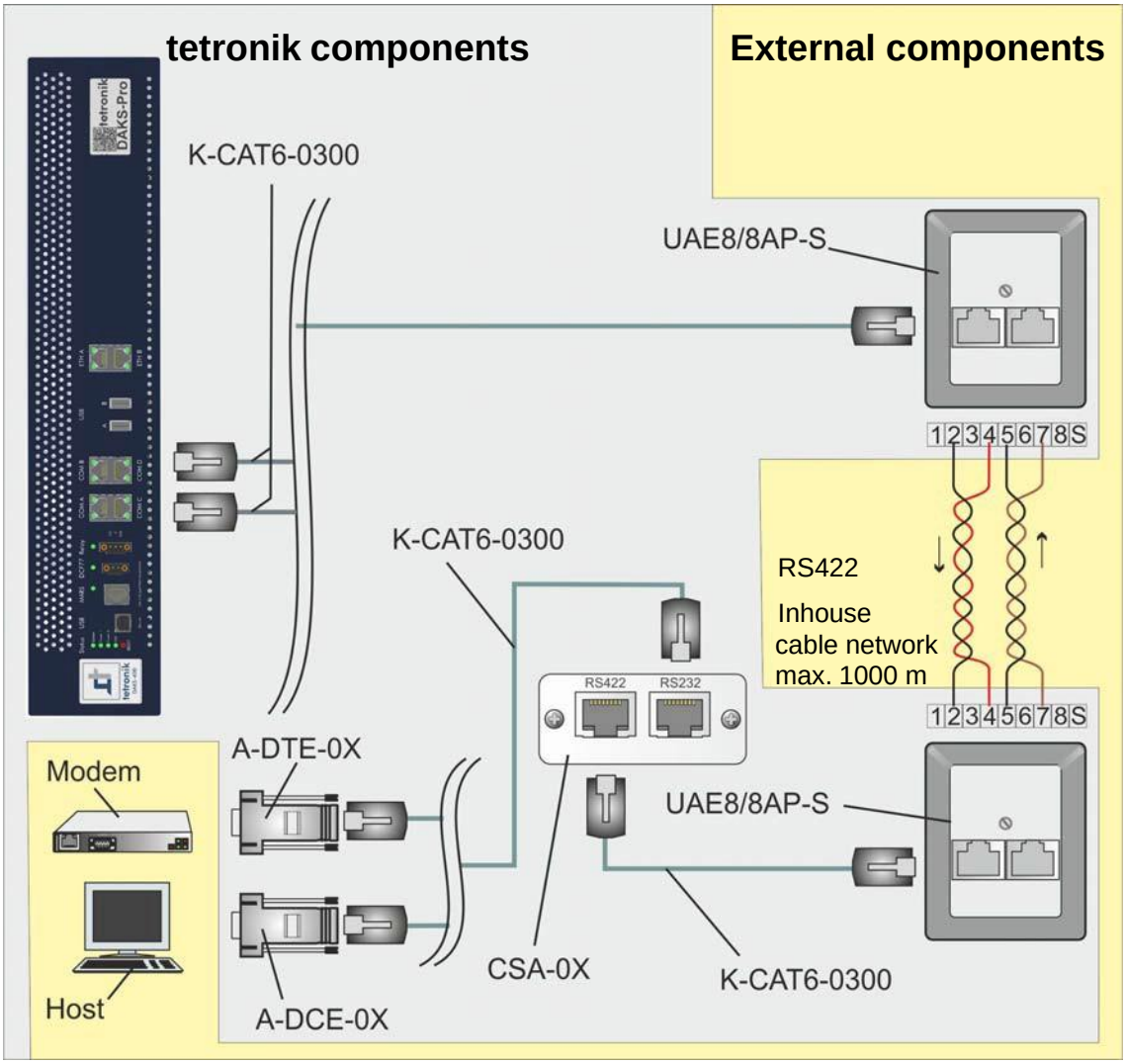


Image 5-7 Wiring plan of the COM interface line extension

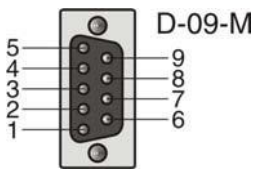
Element	Comment
Modem	Data Communication Equipment (DCE)/Modem, e.g. a GSM radio modem
A-DTE-0X	Adapter to connect OScAR400 to a DCE device  D-09-M 5 4 3 2 1 — 9 8 7 6 Pin 1: DCD Pin 6: DSR Pin 2: RxD Pin 7: RTS Pin 3: TxD Pin 8: CTS Pin 4: DTR Pin 9: n. c. Pin 5: GND
PC/Host	Data Terminal Equipment (DTE), e.g. a call system

Table 5-5 Wiring plan of the COM interface line extension

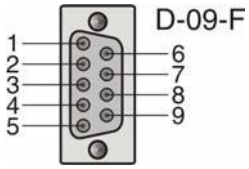
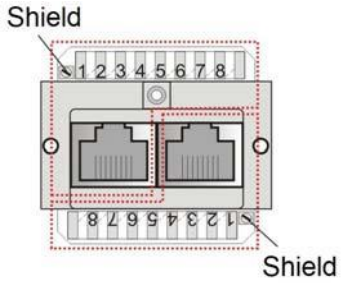
Element	Comment
A-DCE-0X	Adapter to connect OScAR400 to a DTE device  Pin 1: DCD Pin 6: DSR Pin 2: RxD Pin 7: RTS Pin 3: TxD Pin 8: CTS Pin 4: DTR Pin 9: n. c. Pin 5: GND
K-CAT6-0300	Standard patch cable
UAE8/8AP-S	Socket for an RS422 interface.  Pin 2: Tx+/Y Pin 3: GND Pin 4: Tx-/Z Pin 5: Rx+/A Pin 7: Rx-/B Pin 1, 6, 8: n. c.
CSA-0X	Conversion from RS422 to RS232

Table 5-5 Wiring plan of the COM interface line extension

5.7 Line extension of the protocol printer for logging (Leiser)

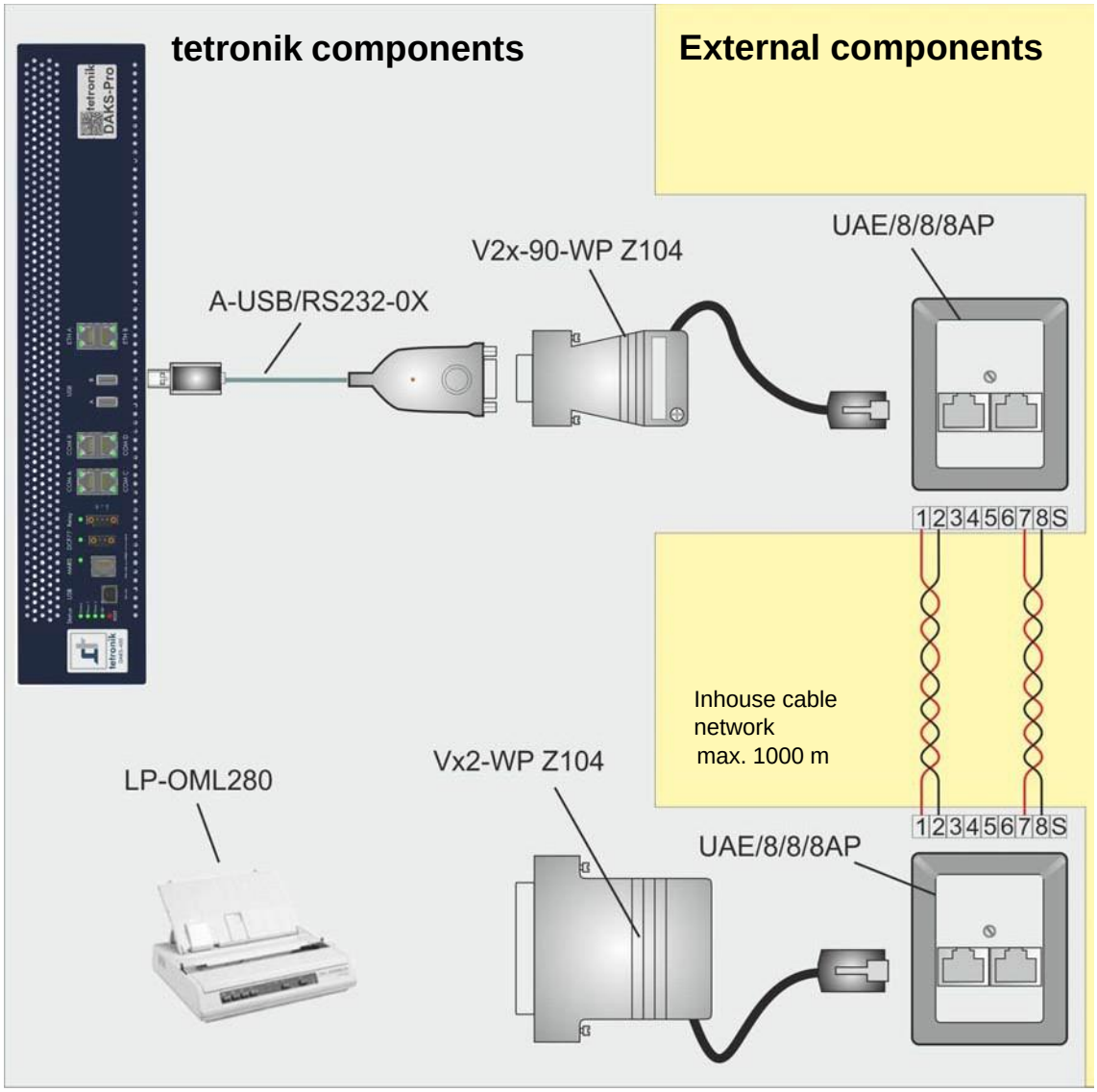


Image 5-8 Wiring plan: Line extension of the protocol printer for logging (Leiser)

Element	Comment
USB/RS232-0X	Adapter to convert from USB to RS232
Leiser Vx2-90-WPZ104	Transmission kit for OScAR 400 to printer
Leiser Vx2-WPZ104	Transmission kit for printer
UAE/8/8/8AP	Female half connector to extend the RS422 interface
LP-OML280-2	Protocol printer for logging
OML280S	RS232 interface module
LP-OML280-2S	LP-OML280-2 with connected RS232 interface module

Table 5-6 Wiring plan: Line extension of the protocol printer for logging (Leiser)

5.8 Line extension of the host interface (without handshake)

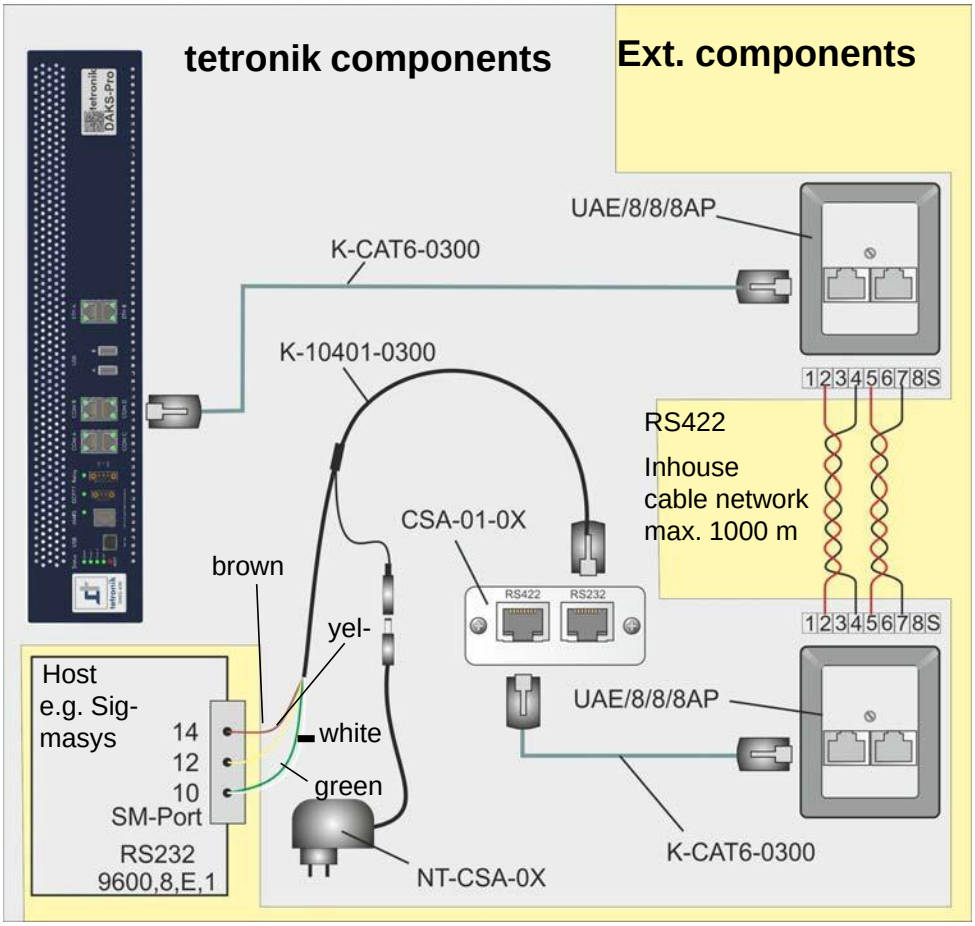


Image 5-9 Wiring plan: Line extension of the Host interface (without handshake)

Element	Comment
K-CAT6-0300	Standard patch cable
UAE/8/8/8AP	Female half connector for the line extension.
CSA-01-0X	Conversion from RS422 to RS232
K-10401-0300	RS-232 data cable cord: Adapter to connect the CSA converter to the electric power supply and the Host (e.g. Sigmasys) • brown: TxD • yellow: RxD • white: GND • green: GND
NT-CSA-0X	Power supply of the CSA converter • Input voltage: 230 V • Output voltage: 9 V • max. output current: 250 mA
Host	e.g. Sigmasys (fire alarm system)

Table 5-7 Wiring plan: Line extension of the Host interface (Sigmasys)

5.9 Schauf Hallway Displays

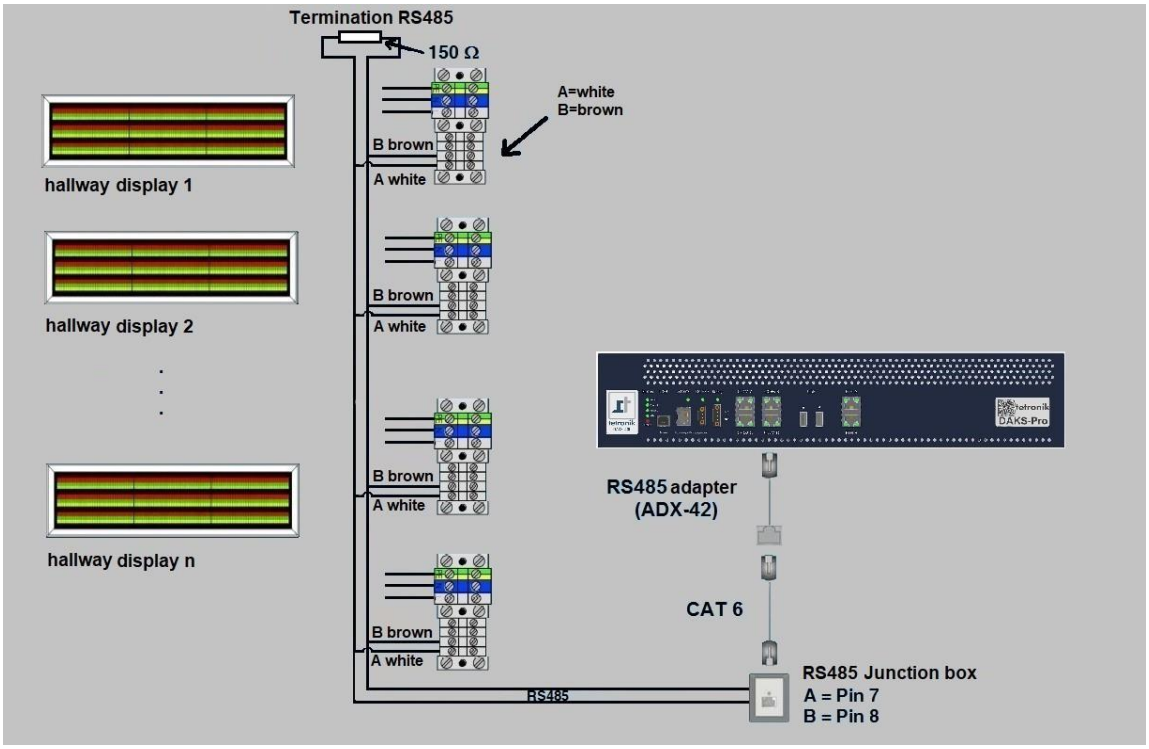


Image 5-10 Wiring plan - Schauf hallway display units

Caution!
The ADX-42 adapter must always be connected directly to the OScAR.
➢ Section 3.9.7 "RS-485 Adapter (ADX-42)"

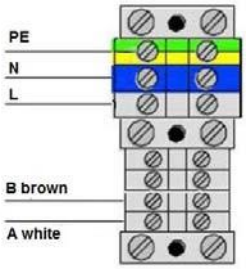
Element	Comment
	RS485 Bus length max.500 m
	Spur/stub lines to the hallway display units, each max.5 m
	Twisted pair cables must be shielded; the shield must be carried along.
	The OScAR server must be installed at one end of the RS485.The other end of the Bus must be terminated with a 150 Ω resistor.

Table 5-8 Wiring plan - Schauf hallway display units

5.10 MARS Error Signaling

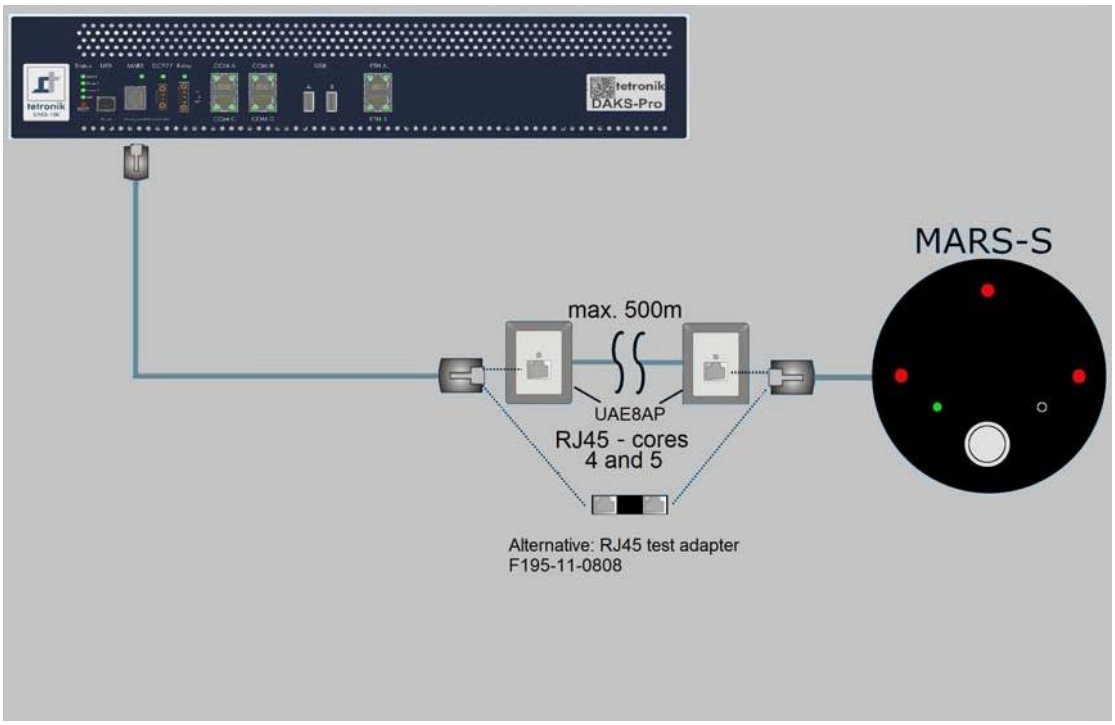


Image 5-11 Wiring plan - MARS Error Signaling

Element	Comment
MARS-S	MARS Signaling module
F195-11-0808	RJ45 Test adapter
UAE/8/8/8AP	Connection box for line extension

Table 5-9 Wiring plan - MARS Error Signaling

6. Declarations of Conformity

This chapter contains the declarations of conformity for OScAR 400.

6.1 Declaration of Conformity OScAR 400

[L J tetronik GmbH

DECLARATION OF CONFORMITY

We declare that the hardware platform

OScAR 400
(name, type, model or version)

is in conformity with the provisions of the following EU-Directives:

Directive 2014/35/EU: On the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits:

Audio/video, information and communication technology equipment
Part 1: Safety requirements:
IEC 62368-1:2014 (2nd Edition)+ Cor.1:2015 + Cor.2:2015
EN 62368-1:2014 + AC: 2015 + A11: 2017 + AC: 2017

Directive 2014/30/EU: On the harmonisation of the laws of the Member States relating to electromagnetic compatibility:

Electromagnetic compatibility of multimedia equipment - Emission:
EN 55032:2015/A11:2021-03

Information technology equipment- Immunity characteristics:
EN 55035: 2017

Electromagnetic compatibility (EMC):

EN 61000-3-2:2016	Part 3-2:	Harmonic Current Emmissions.
EN 61000-3-3:2013	Part 3-3:	Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage systems.

Directive 2011/65/EU: On the restriction of the use of certain hazardous substances in electrical and electronic equipment:

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances:
EN 50581: 2012

conformity in accordance with

Taunusstein, April 27th, 2022

(Heiko Trapp – General Manager)
(Name, Function and signature of authorized person)

tetronik GmbH
Silberbachstrasse 10
65232 Taunusstein
Germany

Tel. +49 6128 963 0

Internet: www:tetronik.com

Management Directors: Heiko Trapp, Winfried Geutsch
Commercial registry: Wiesbaden; HRB 16054

Number of Declaration: 2022/01

6.2 Declaration of Conformity Digital 1/0

tetronik GmbH

DECLARATION OF CONFORMITY

We declare that the hardware platform

Digital I/O
IOG-03A, IOG-11A, IOM-02A, IOM-11A
(name, type, model or version)

is in conformity with the provisions of the following EU-Directives:

Directive 2014/35/EU: On the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits:

Audio/video, information and communication technology equipment
Part 1: Safety requirements:
IEC 62368-1:2014 (2nd Edition) + Cor.1:2015 + Cor.2:2015
EN 62368-1:2014 + AC: 2015 + A11: 2017 + AC: 2017

Directive 2014/30/EU: On the harmonisation of the laws of the Member States relating to electromagnetic compatibility:

Electromagnetic compatibility of multimedia equipment - Emission:
EN 55032:2015/A11:2021-03

Information technology equipment- Immunity characteristics:
EN 55035: 2017

Directive 2011/65/EU: On the restriction of the use of certain hazardous substances in electrical and electronic equipment:

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances:
EN 50581:2012

conformity in accordance with ISO/IEC

Taunusstein, April 27th, 2022
(Place and date of ·

(Heik enera Manage
(Name, Function and signature of authorized person)

tetronik GmbH
Silberbachstrasse 10
65232 Taunusstein
Germany

Tel. +49 6128 963 0

Internet: www.tetronik.com

Management Directors: Heiko Trapp, Winfried Geutsch
Commercial registry: Wiesbaden; HRB 16054

Number of Declaration: 2022/08

6.3 Declaration of Conformity MARS

tetronik GmbH

EU DECLARATION OF CONFORMITY

We declare that the hardware platform

Major-Alarm-Remote-Signaller
MARS and MARS-adapter
(name, type, modelor version)

is in conformity with the provisions of the following EU-Directives:

Directive 2014/35/EU: On the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits:

Information technology equipment • Safety:
IEC 62368-1:2014 (2nd Edition) + Cor. 1:2015 + Cor. 2: 2015
EN 62368-1:2014 + AC: 2015 + A11:2017 + AC: 2017

Directive 2014/30/EU: On the harmonisation of the laws of the Member States relating to electromagnetic compatibility:

Electromagnetic compatibility of multimedia equipment
- Emission: EN 55032: 2015

Information technology equipment • Immunity characteristics:
EN 55035: 2017

Directive 2011/65/EU: On the restriction of the use of certain hazardous substances in electrical and electronic equipment:

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances:
EN 50581:2012

conformity in accordance with ISO/IEC 17050

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Taunusstein, July 23th, 2019

(Heiko Trapp – General Manager)
(Name. Function and signature of authorized person)

tetronik GmbH
Silberbachstrasse 10
65232 Taunusstein
Germany

Tel. +49 6128 963 0

Internet: www.tetronik.com

Management Directors: Heiko Trapp, Winfried Geutsch
Commercial registry: Wiesbaden: HRB 16054

Number of Declaration: 2019/02

7. PBX Systems and Soft Switches

This chapter covers in brief the coupling of OScAR 400 to the PBX network or the convergent voice/ data networks and to their trunk connections. It also refers to the external configuration instruc- tions for the respective interface(s).

Overview:

The coupling between OScAR 400 and the PBX network or the convergent voice/data network is carried out application-dependent with up to 500 channels via VoIP with LAN interface (10/100/
1000BASE-T) via VoIP trunking.

The coupling to the PBX system or to the PBX network is carried out via trunk connection with a code and with direct inward dialing (DDI), enabling OScAR 400 to be seen, from the network's side, like an additional network node, i.e. like a subsystem with its own numbering plan.

This is therefore NOT a CSTA-coupling (such as e.g. ACL or CAP for Unify PBX systems).

Note:
OScAR 400 operates maximally with 500 channels.

Note:
Please be aware that the configuration of the interface(s) between Hardware Service Manual and the various PBX systems or soft switches is not part of this document.
For documentation of the configuration of the PBX interfaces:

- either on the Installation CD under "Documentation"
  Caution! This information may have already become obsolete!
- or via Extranet at: www.tetronik.com/downloads/service-and-support

Warning!
To access the Extranet, you must be a service technician trained on OScAR and registered with tetronik GmbH (access data already be available for FTP-download can be used for this area also)