Allied Vision

ALVIUM FPD-LINK III / GMSL2 COAX CAMERAS

FAKRA Coaxial Cables

User Guide

V1.1.0

Allied Vision Technologies GmbH // Taschenweg 2a, 07646 Stadtroda / Germany

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Quick links

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Read before use

EN - English

Safety

Before using the product, read these safety instructions. Observe the warnings at all times. Use the product only as stated in the Responsible parties on page 15.

Intended use

Intended use of Allied Vision product is the integration into vision systems by professionals. All Allied Vision product is sold in a B2B setting.

DA - Dansk

Sikkerhed

Læs sikkerhedsanvisningerne, før produkt bruges. Overhold alle advarsler. Brug kun produkt som anført i Responsible parties på side 15.

Tilsigtet brug

Allied Vision produktets tilsigtede brug er en indbygning i et visionssystem, udført af fagfolk. Alle Allied Vision produkter sælges i B2B.

DE - Deutsch

Sicherheit

Bevor Sie das Produkt benutzen, lesen Sie diese Sicherheitshinweise. Beachten Sie diese Hinweise immer. Verwenden Sie das Produkt nur wie beschrieben in Responsible parties auf Seite 15.

Bestimmungsgemäßer Gebrauch

Allied Vision Produkte sind bestimmt für die Integration in Bildverarbeitungs-systeme durch Fachpersonal. Alle Allied Vision Produkte werden in einer B2B-Umgebung verkauft.

ES - Español

Seguridad

Antes de utilizar el producto lea estas instrucciones de seguridad. Observe las advertencias en todo momento. Utilice el producto solo tal y como se estipula en el Responsible parties en la página 15.

Uso previsto

El uso previsto del producto Allied Vision es la integración en el sistema de visión por parte de profesionales. Todos los productos Allied Vision se venden dentro de una relación B2B.

FI - Suomi

Turvallisuus

Lue nämä turvallisuusohjeet ennen tuotteen käyttöä. Noudata tuotetta joka hetki. Käytä tuotteen ainoastaan kohdassa Responsible parties sivulla 15 kuvatulla tavalla.

Käyttötarkoitus

Allied Vision-tuotteen käyttötarkoitus on integrointi kuvajärjestelmiin ammattilaisten toimesta. Kaikki Allied Vision-tuotteet myydään B2B-ympäristössä.

FR - Français

Sécurité

Veuillez lire ces consignes de sécurité avant d'utiliser le produit. Respectez continuellement les avertissements. Utilisez le produit uniquement comme indiqué sous Responsible parties, page 15.

Utilisation prévue

L'utilisation prévue du produit Allied Vision est son intégration dans des systèmes de vision par le soin de professionnels. Tout produit Allied Vision est vendu dans un cadre B2B.

HE - עברית

בטיחות

לפני השימוש במוצר, עליך לקרוא את הוראות הביטחון האלו. עליך לממש הוראות ביטחון אלו תמיד.
השימוש במצלמה הוא רק לפי מה שכתוב ב"כוונת השימוש" (Responsible parties בעמוד 15).

שימוש מיועד

מוצרי AlliedVision מיועדים לשילוב במערכות ממוחשבת לעיבוד צילומים ע"י אנשי מקצוע.
כל מוצרי AlliedVision נמכרים לשימוש בסביבת B2B.

IT - Italiano

Sicurezza

Leggere queste istruzioni per la sicurezza prima di utilizzare il prodotto. Osservare sempre tutte le avvertenze. Utilizzare il prodotto come descritto alla sezione Responsible parties a pagina 15.

Uso previsto

Il prodotto Allied Vision è concepito per essere integrato in sistemi di monitoraggio in campo professionale. Tutti i prodotti Allied Vision sono venduti in uno scenario B2B.

JA – 日本語

安全性

本製品を使用する前に、この安全ガイドをお読みください。警告を必ず守ってください。必ず21ページのResponsible parties 15 ページに従って使用してください。

用途

Allied Vision製品は、専門家が視覚装置に統合することを意図したものです。すべてのAllied Vision製品は、企業間取り引き用に販売されています。

NL - Nederlands

Veiligheid

Lees deze veiligheidsinstructies voordat u het product gebruikt. Neem deze waarschuwingen altijd in acht. Gebruik het product uitsluitend, zoals aangegeven in het Responsible parties op pagina 15.

Beoogd gebruik

Het beoogde gebruik van het Allied Vision-product is de integratie in optische systemen door professionals. Alle Allied Vision-producten worden verkocht in de B2B-markt.

NO - Norsk

Sikkerhet

Les disse sikkerhetsinstruksene før du bruker produkt. Følg advarslene til en hver tid. Bruk kun produkt i samsvar med Responsible parties på side 15.

Tiltenkt bruk

Den tiltenkte bruken av Allied Vision-produktet er integrering i visjonssystemer av profesjonelle. Alle Allied Vision-produkter selges i en forretning til forretning-situasjon.

SV - Svenska

Säkerhet

Läs igenom säkerhetsinstruktionerna innan du använder produkten. Var hela tiden särskilt uppmärksam på varningarna. Använd enbart produkten på det sätt som anges i Responsible parties på sida 15.

Avsedd användning

Den avsedda användningen av Allied Vision-produkter är integrering i visionssystem av fackmän. Samtliga Allied Vision-produkter säljs i en B2B-miljö.

ZH - 简体中文版

安全需知

在使用产品之前，请阅读这些安全说明。请务必遵守相关警告 和 Responsible part i es于第 15 页 .

预期用途

Allied Vision 产品的预期用途是由专业人士整合到视觉系统中。所有 Allied Vision 的产品均通过 B2B 渠道销售。

This document at a glance

Get an overview of documentation for FAKRA coaxial cables:

Note 8
What else do you need? 8

Note

Read this document carefully

Learn to use FAKRA coaxial cables in the most safe and efficient way and avoid damage to your embedded system.

What else do you need?

This is a selection of helpful downloads:

Download	Link
Documentation for installation and operation: • Alvium FP3/GM2 User Guide • Alvium CSI-2 Cameras User Guide • User guides for deserializer boards	www.alliedvision.com/en/support/technical-documentation/alvium-csi-2-documentation/
Accessories, such as FAKRA coaxial cables, FPC cables, I/O cables, lenses, and tripod adapters	www.alliedvision.com/en/products/accessories
SerDes Configurator: Please contact the Allied Vision Support team at...	www.alliedvision.com/en/about-us/contact-us/technical-support-repair-/-rma

Table 1: Downloads for FAKRA coaxial cables

Contact us

Website, email

General
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info@alliedvision.com

Distribution partners
www.alliedvision.com/en/avt-locations/avt-distributors

Support
www.alliedvision.com/en/support
www.alliedvision.com/en/about-us/contact-us/technical-support-repair-/-rma

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Document history and conventions

This chapter includes:

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Document history

Version	Date	Remarks
V1.1.0	2025-Aug-18	• Cables by Allied Vision will be replaced by cables by Quaestum: - Added Quaestum for manufacturer in Responsible parties on page 15. - Removed chapters for intended use and copyright. - Added new product codes in Specifications overview on page 20. • Applied editorial changes.
V1.0.4	2025-Jul-11	• Removed UKCA logo from Compliance notifications on page 15. • Removed contents for ISO 13485 and updated definitions for Intended use on page 15.
V1.0.3	2024-Jul-15	Updated addresses in Contact us on page 9.
V1.0.2	2024-Mar-15	Added UKCA symbol in Compliance notifications on page 15.
V1.0.1	2023-Sep-27	• Updated title image. • Applied editorial changes.
V1.0.0	2023-Apr-19	Release version

Table 2: Document history

Conventions used in this user guide

To give this user guide an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

Typographical styles

Style	Function
Emphasis	Highlighting important things
Web links and references	Links to webpages and internal cross references

Table 3: Typographical styles

Symbols and notes

NOTICE

Material damage

Precautions are described.

Practical tip

Additional information helps to understand or ease handling the camera and components.

Additional information

Web link or reference to an external source with more information is shown.

Compliance, safety, and intended use

This chapter includes:

Responsible parties 15
How to avoid damage to the product 16

Responsible parties

Distributor in the EU

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How to avoid damage to the product

To prevent material damage, read the following to understand risks in using FAKRA coaxial cables.

Electrical connections

FPD-Link III and GMSL2 do not specify electrical connections as extensively as the USB or GigE standard. Plug and play is not supported. Read specifications carefully.

Components can easily be damaged. If you are unfamiliar with FPD-Link III and GMSL2 connections or with embedded systems, be extremely careful. Follow the instructions in the Alvium FP3/GM2 User Guide.

Allied Vision accessories help to avoid damage to the camera and connected components.

Compatible accessories

We recommend using accessories by Allied Vision, see www.alliedvision.com/en/products/accessories.

Strain relief for all cable connections

If FAKRA coaxial connectors are exposed to excessive stress, they can break off from devices.

Provide sufficient strain relief for all cable connections to avoid malfunctions and damage to electronics by wrong polarity and short circuits. To protect cameras and connected components, secure cables as shown in Figure 1.

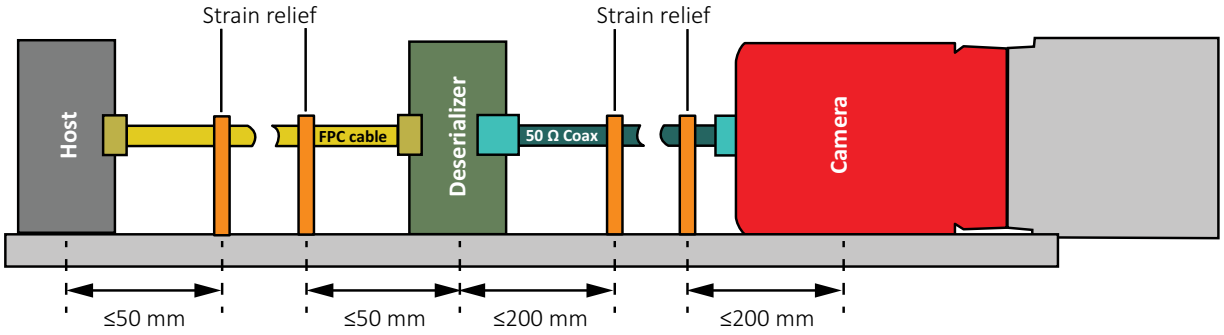

Figure 1: Strain relief for all cable connections

FAKRA coaxial connectors and cables

FAKRA coaxial connectors enable a robust connection. However, if the cable is overstressed, these connectors can break off from devices.

- Unlock the cable connector while you are disconnecting devices.
- Avoid stress to FAKRA coaxial connectors and cables.
- Observe the minimum bending radius for coaxial cables: 49.5 mm (for applications with static cables only).
- Observe instructions for Strain relief for all cable connections on page 16.
- Follow the instructions in Precautions on page 22.

Figure 2: FAKRA coaxial connectors on cameras (left) and on cables (right)

Additional information

For technical data and more instructions on FAKRA coxial connector Code Z (water blue) and cables, see the manufacturer data sheet at www.rosenberger.com.

No hot-plugging for FPD-Link III and GMSL2

Alvium FP3/GM2 Coax cameras do not support hot-plugging. Hot-plugging can destroy the camera and connected hardware by high inrush current.

Disconnect power supplies before connecting or disconnecting devices from each other.

Signal quality

Noise and electromagnetic interference can disable camera functions.

- Avoid squeezing cables and bending cables over edges.
- Avoid contact to metal surfaces, causing electromagnetic interference.
- Please use cables recommended by Allied Vision.

Ground loops

Unsuitable connections can lead to different potentials between the camera system GND and the environmental shield/chassis GND caused by ground loops. This can damage the camera and the connected devices or cause malfunctions.

- Avoid potential differences between the camera housing and GND.
- All wiring must be done by authorized personnel, according to the corresponding technical standards.
- You may mount the camera electrically isolated.
- Read the Avoiding Ground Loops in Vision Systems application note.

More information

See the Avoiding Ground Loops in Vision Systems application note at www.alliedvision.com/en/support/technical-documentation/alvium-csi-2-documentation.

Specifications

This chapter includes:

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Specifications overview

Feature	Specification
Product codes [1]	**28901** (18424): 5 m **28902** (18425): 10 m **28903** (18426): 15 m
Cable material	LEONI Dacar 302-3
Cable length [1]	**28901** (18424): 5 m ± 20 mm **28902** (18425): 10 m ± 20 mm **28903** (18426): 15 m ± 20 mm
Cable thickness	~ 3.2 mm
Connector type	FAKRA Code Z (water blue)
Classification	Industrial grade for applications with static cables
Static bending radius (min.)	49.5 mm (for applications with static cables only)
Shielding	Impedance controlled (50 Ω)
Compatible connector	FAKRA Code Z (water blue)
Supported devices	Alvium FP3/GM2 Coax cameras and compatible deserializers
Operating temperature range	-40 °C to +105 °C

[1] **Current product codes** for cables by Quaestum (previous product codes for cables by Allied Vision)

Table 4: FAKRA coaxial cables specifications overview

Additional information

For technical data and more instructions on the FAKRA coxial connector Code Z (water blue) and on LEONI Dacar cable material, see the manufacturer data sheets at www.rosenberger.com.

Technical drawing

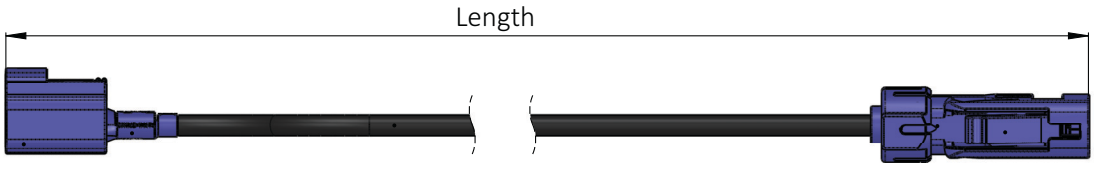

Figure 3: FAKRA coaxial cables technical drawing

Connecting FAKRA coaxial cables

This chapter includes basic instructions for connecting FAKRA coaxial cables:

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FAKRA coaxial cable-side connectors 22
Instructions for connecting 23
Instructions for disconnecting 23

Precautions

The robust FAKRA coaxial connectors are optimized for one-time plugging in the automotive industry. Unplugging cable connectors is uncomfortable, which may lead to material damage. Please follow the instructions in this section.

NOTICE

Damage to cameras and connected peripherals

If FAKRA coaxial connectors are exposed to excessive stress, they can break off from the corresponding device.

- Secure coaxial cables at maximum 200 mm off the connected device.
- See Strain relief for all cable connections on page 16.
- Follow the instructions below for FAKRA coaxial cables.

FAKRA coaxial cable-side connectors

Figure 4 shows the latch of the locking mechanism of the FAKRA coaxial cable-side connectors in unlocked position (schematics):

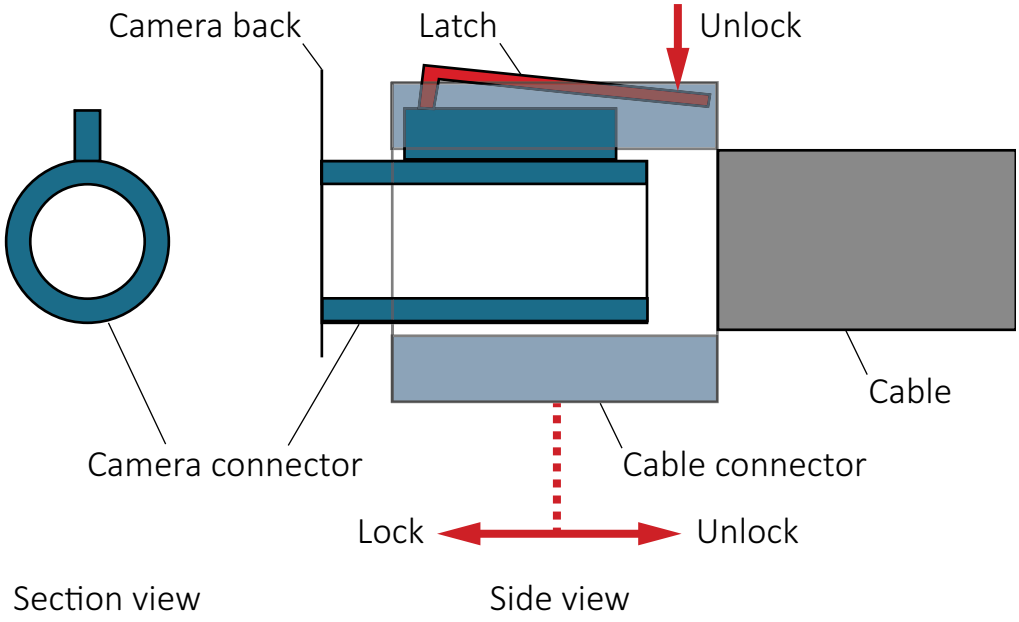

Figure 4: FAKRA coaxial cable-side connector: Locking mechanism

The cable-side connector has a locking mechanism that must be engaged for safe connection. To unplug the cable-side connector, the lever must be **pressed all the time while** the cable is pulled off the device's connector. Otherwise, the device's connector can be torn off the device.

Instructions for connecting

1. Grab the device (the camera in this example) with one hand and the cable-side connector with the other hand.
2. Align the groove (b) of the cable-side connector with the notch (a) of the device's connector.

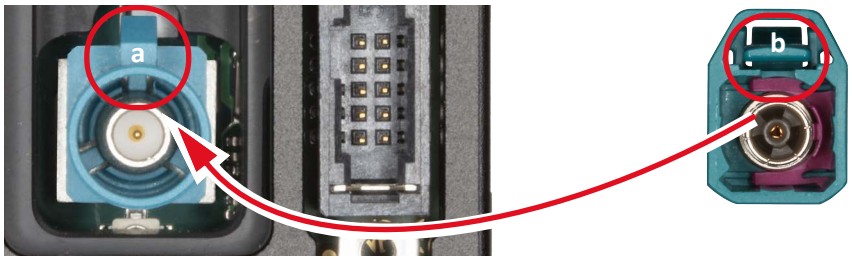

Figure 5: FAKRA coaxial connectors on cameras (left) and on cables (right)

3. Push the cable-side connector over the device's connector until it clicks.

The device is connected properly.

Instructions for disconnecting

1. Grab the device with one hand and the cable-side connector with the other hand.
2. With your fingernail, press down the latch (c) of the cable-side connector.

NOTICE

Damage to cameras and connected peripherals

If the FAKRA coaxial connectors are exposed to excessive stress, they can break off from devices.

Keep the latch (c) pressed down until the cable has been completely disconnected from the device.

3. **Keeping the latch (c) pressed down**, pull the cable-side connector off the device. You may slightly rotate and tilt the cable-side connector against the device to reduce friction.

The device is disconnected.

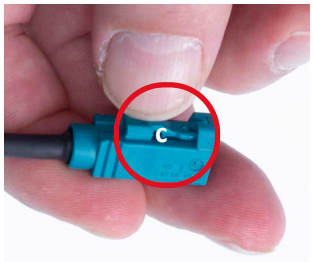

Figure 6: Pressing down the latch (c) of the FAKRA coaxial connector

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