HD Fibre adapter LDK 5476

Contents

1   Important information

1.1   Fibre optic transmission units

The CLASS 1 LASER PRODUCT label is located on top of the fibre optic connector on the rear panel.

Laser safety statement (Europe)

Fibre optic transmission units are classified as a "CLASS 1 Laser Product" according to EN 60825-1, Safety of Laser products. Class 1 laser products are considered safe and do not result in biological hazard if used according to the instructions.

Laser safety statement (US)

Fibre optic transmission units are classified as a "CLASS 1 Laser Product" according to 21CFR 1040.10 of the US Food and Drug Administration (FDA) Center for Devices and Radiological Health.

⚠️ **WARNING**

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

1.2   Handling precautions

A number of events can damage fibre optic connectors and cables. Unprotected connector ends can experience damage by impact, airborne dust particles, or excess humidity or moisture. To prevent deterioration of performance observe the following:

- Always put the dust caps on cable and panel connectors immediately after disconnecting a cable.
- Keep connectors and dust caps clean.
- Never touch the fibre end face of the connector.
- Do not overly bend the cable where it attaches to the base of the connector.
- Avoid applying tension to the cable.

- Do not twist the cable.

- Insert the cable straight into the connector, not at an angle.

- Do not allow the cable to kink.

- Avoid impact damage to connectors; do not let them hit the floor.

- Cover a fibre optic connector when it is not in use.

Cleaning

The fibre end face and ferrule must be absolutely clean before it is inserted into a transmitter or receiver. Dust, lint, oil (from touching the fibre end face), or other foreign particles obscure the end face, compromising the integrity of the optical signal being sent over the fibre.

⚠ **WARNING**

Never clean an optical connector attached to a fibre that is carrying light.

Fibre optic connectors need to be cleaned every time they are mated; it is essential that users develop the necessary discipline to always clean the connectors before they are mated. Mate the connector immediately after cleaning! Don't let the connector lie around and collect dust before mating.

The connectors used on the LDK 5476 HD Fibre adapter and LDK 4503 Base Station are Lemo hybrid optical connectors (SMPTE 304M). Refer to the connector manufacturer for specific instructions on cleaning these connectors.

2   Specifications

Table 1 LDK 5476 HD Fibre adapter

Item	Value
Power requirements	Fibre powered or 12 Vdc
Operating temperatures	-20 to +45°C (-4 to +113°F)
Storage temperatures	-20 to +60°C (-4 to +140°F)
Weight (approx.)	2.3 kg
Dimensions	220 (L) x 120 (W) x 205 (H) without handgrip
Fibre in/out	Lemo hybrid optical connector (SMPTE 304M)
Fibre attenuation	> 12.5 dB
Fibre cable	Hybrid cable (SMPTE 311M) Length 4000m (13,000ft.) max.
Intercom	XLR5/Tuchel with channels ENG/PROD/PROG
Video (CVBS) out	Optional: 1 Vpp; 75 Ohm; BNC
Video telepromter out	1 Vpp; 75 Ohm; BNC
Monitor (Y)	1 Vpp; 75 Ohm; BNC
Reference in	1 Vpp; 75 Ohm; BNC
Tracker	11 pins Communication / Signalling
Auxilary/ Data	11 pins private data
Rear microphone in (2x)	XLR 3, balanced, +48V
DC12Volts in	XLR-4 male
Scriptlight power	12 Volts, 0,25A, 3-pin Fisher
DC12Volts out	4-pin Fisher 1.5 Amp.

3 HD Fibre adapter controls

Figure 1 LDK 5476 HD Fibre adapter controls
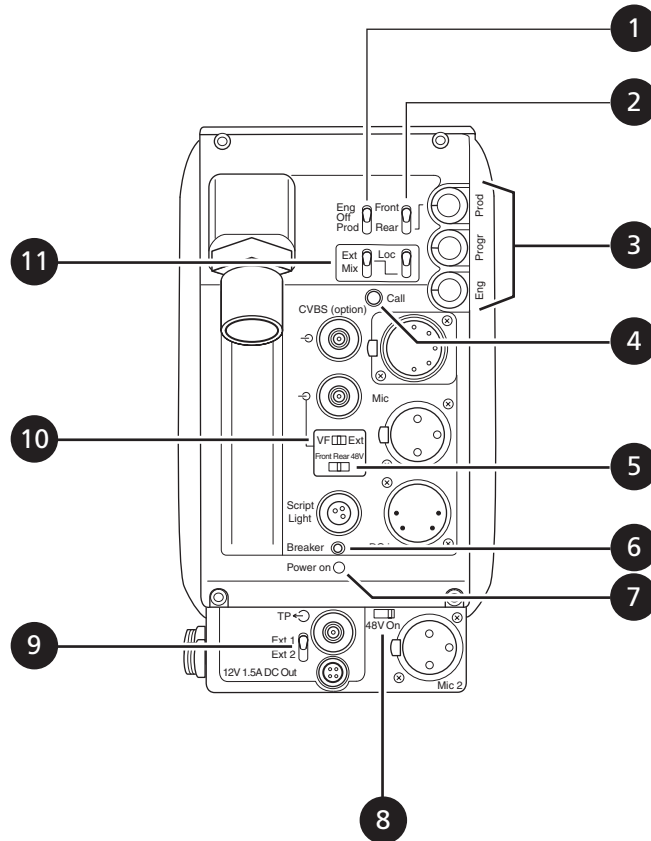
1. Intercom routing switch
2. Headset production vol. control selection
3. Headset volume controls
4. Call button
5. Audio microphone switch
6. Circuit breaker button (BREAKER)

7. Power on indicator
8. Microphone 2 phantom power switch
9. External signal selection
10. Viewfinder display signal
11. Video output selection switch

3.1   Powering the camera

The power supply for the camera and adapter is normally supplied via the fibre cable from the Base Station. The power on indicator (6) lights when power is supplied and the camera power switch is On.

When power is supplied via the fibre cable, an output power socket supplies +12 Vdc, 1.5A maximum for powering accessories.

If excessive current flows in the camera or adapter, the circuit breaker (7) trips and shuts off power to all the units. If this happens check the units for faults and if necessary take corrective action before pressing the circuit breaker button to reset the power.

It is also possible to operate the camera without a fibre cable by supplying a +12 Vdc supply to the DC input socket.

3.2   Selecting monitoring signals

Viewfinder display signal

The viewfinder can display local or external video signals. Two switches (11) determine the signal that is displayed in the viewfinder.

Set the first switch to LOC to display the local camera Y signal in the viewfinder. (The Ret. button on the lens also selects this signal in parallel with this switch.) If set to the other position, then the second switch determines the signal displayed in the viewfinder.

The second switch selects the signal displayed in the viewfinder when the viewfinder signal selection switch is not in the LOC position. The signal then displayed is:

- EXT   Base Station external input 1 or 2.
- MIX   Base Station external input 1 or 2 and camera Y signal mixed.

External signal selection

The External signal selection switch (9) selects either the EXT1 or EXT 2 signal from the Base Station.

In addition to this switch, other switches on the camera (VTR start) can be set up in the Install menu to switch this function.

Output monitoring signal

The monitoring output selection switch (10) determines whether the viewfinder signal from the camera or the external video signal from the Base Station is available at the output connector .

3.3   Using audio

Two high quality audio channels are available in the fibre mode. Set the gain levels (-22 to -64 dB) for these channels in the Audio section of the Install menu. A high-pass filter for each channel can also be switched on via this menu.

Audio channel 1

The microphone for channel 1 is connected either to the socket at the front-right of the camera or to the Mic 1 socket on the adapter. A 3-position switch (5) activates the socket at the front-right or the connector at the rear. The third position selects the rear socket with a phantom power supply (48V).

Audio channel 2

The microphone for the second audio channel is connected to the Mic 2 socket on the adapter. A 2-position switch (8) selects a phantom power supply (48V) for the second audio microphone.

3.4 Intercom

Three intercom channels – production (Prod), program sound (Prog) and engineering (Eng) – are sent from the Base Station to the camera operator's headset. The camera operator's intercom microphone signal is sent to the Base Station. A tracker can also connect a headset to the intercom system to receive all of the channels from the Base Station and the camera operator's microphone signal as well. The tracker's microphone signal is passed to the camera operator and to the Base Station.

The Intercom section of the Install menu contains various settings for all these channels. Signals for left and right headset muffs and sidetone levels can be selected. Intercom microphone amplification levels, phantom power supply and microphone on/ off switches are also available in this menu.

Additional controls are found on the back of the adapter.

Intercom microphone routing switch

This 3-position switch (1) routes the camera operator's intercom microphone signal to engineering (Eng) or production (Prod), or turns off the intercom. Use the VTR Start button at the front of the camera, or the VTR button on the lens, to send the camera operator's intercom microphone signal to production, regardless of the position of this switch.

Production volume control selection

Use this 2-position switch (2) to control the volume of the production signal in the intercom either at the front of the camera or at the rear of the adapter.

Intercom headset volume controls

- Prod - adjusts the volume of the production signal to the camera operator's headset when selection switch (2) is in the REAR position.

- Prog - adjusts the volume of the programme signal to the camera operator's headset.

- Eng - adjusts the volume of the engineering intercom signal to the camera operator's headset.

3.5   Communication

Call button

Press this momentary button (4) to send a signal to the control panels calling for attention. The ND/RE indicator in the 1.5-inch viewfinder shows when a call signal is sent or received.

Data channel

The Aux connector on the side of the adapter provides analogue control signals and facilities for the connection of a two-way private data channel between camera and Base Station. In the Install menu, the tracker microphone and engineering intercom channels can be selected to carry the private data instead of their normal function.

On-air signal

The tracker connector on the side of the adapter, as well as providing full intercom facilities for the dolly or crane driver, also carries a tally signal and a +12 Vdc power supply. This allows an external on-air lamp to be used.
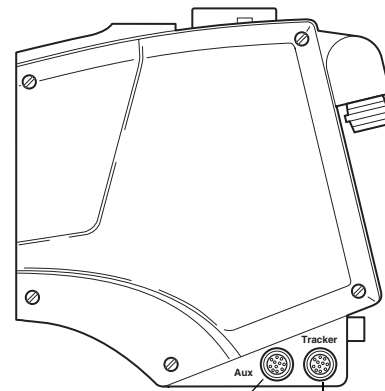
4   HD Fibre adapter connectors

Figure 2 LDK 5476 HD Fibre adapter connector location

Fibre connector

CVBS output

Viewfinder/Ext. video output

Script light power supply

Teleprompter output

DC power and tally output

Intercom headset

Audio microphone 1 input

DC power supply input

Audio microphone 2 input
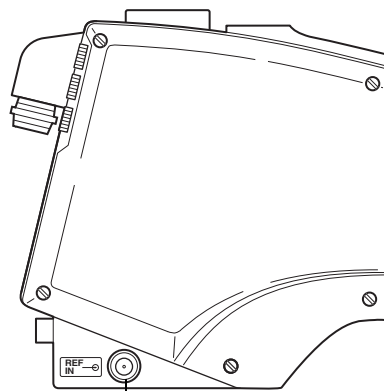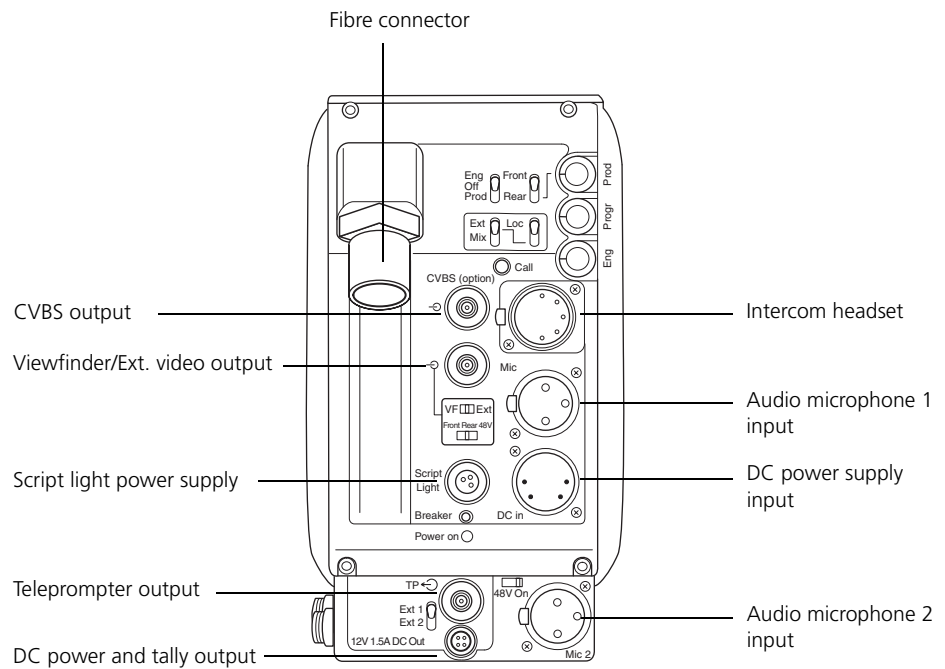
Reference signal input

Auxiliary connector

Tracker communication connector

4.1 Fibre connector

Figure 3 Fibre connector
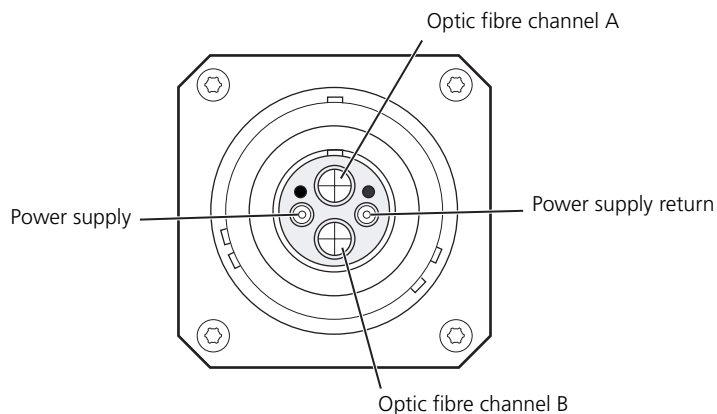
Lemo hybrid optical connector (SMPTE 304M): panel view (X100)

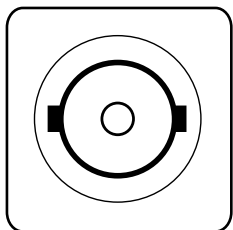## 4.2 CVBS output connector

Figure 4 CVBS output connector

This socket provides a 1.0 Vpp CVBS output video signal.
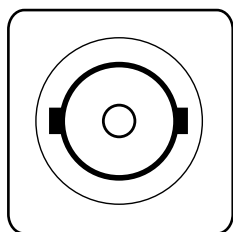
BNC connector: panel view (X105)

4.3 Viewfinder / External video output connector

Figure 5 Viewfinder / External video output connector

This socket provides a 1.0 Vpp VBS output viewfinder signal or the external video signal from the Base Station.

BNC connector: panel view (X106)

4.4   Script light power supply socket

Figure 6 Script light power supply output connector

1. +12 Vdc (maximum dissipation 3W)
2. Power return
3. Shield
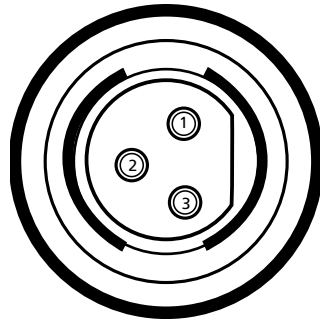
Fischer 3-pole female: panel view (X102)

4.5   Teleprompter video output connector

Figure 7 Teleprompter video output connector
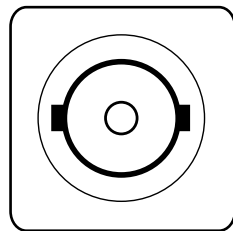
This socket supplies the 1Vpp teleprompter signal applied to the Base Station.

BNC connector: panel view (X112)

4.6   DC power and tally output socket

Figure 8 DC power and tally output connector

1. Ground
2. On air
3. No connection
4. +12 Vdc (max. 18W)

Shield of cable directly to the connector housing.

The socket provides access to an internal tally switch. When the camera is on-air, the contact of the internal relay is closed.
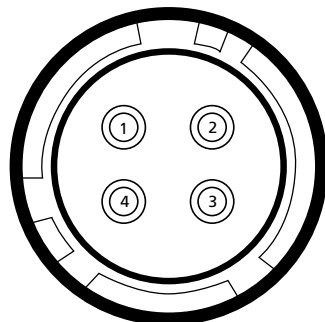
Hirose 4-pole female: panel view (X110)

4.7   Audio microphone 2 connector

Figure 9 Audio microphone 2 connector
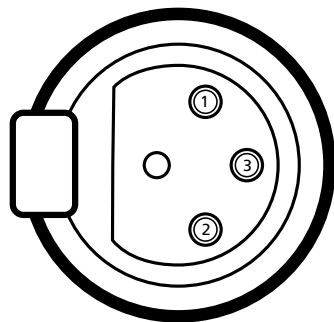
1.   Audio Screen

2.   Audio In

3.   Audio Return

Microphone impedance >200 ohm

Sensitivity range: -64 to -24 dBu

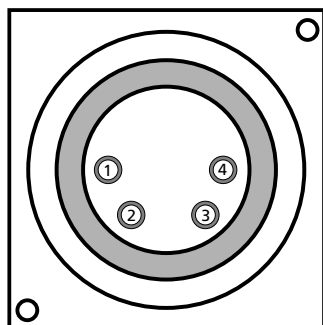Signal at pin 2 of audio input is in phase with signal at pin 2 of audio output.

XLR 3-pole female; panel view (X107)

4.8   DC power input socket

⚠ **Caution**

The input voltage must not exceed +17 Vdc.

Figure 10 DC power input connector
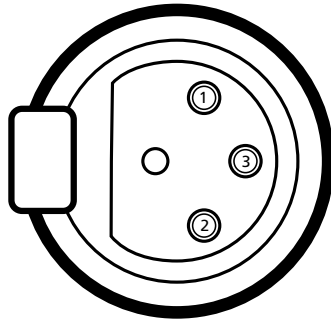
1.   Ground

2.   No connection

3.   No connection

4.   +10.5 Vdc . . . +17 Vdc

This socket accepts a DC voltage of 12V nominal. Maximum power consumption 23W.

XLR 4-pin male: panel view (X101)

4.9   Audio microphone 1 connector

Figure 11 Audio microphone 1 connector
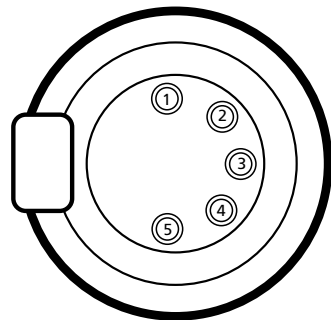
1.   Audio Screen

2.   Audio In

3.   Audio Return

Microphone impedance >200 ohm

Sensitivity range: -64 to -24 dBu

Signal at pin 2 of audio input is in phase with signal at pin 2 of audio output.

XLR 3-pole female; panel view (X107)

## 4.10   Intercom headset connector

Figure 12 XLR intercom headset connector

1.   Microphone return

2.   Microphone

3.   Telephone return

4.   Telephone left

5.   Telephone right

Microphone level: -64 dBu / -24 dBu switchable
Microphone impedance: >600 Ohm

Telephone level: +6 dBu nominal
Telephone output impedance: <50 Ohm

XLR 5-pole female; panel view (X104)

Figure 13 Tuchel intercom headset connector

1.   Telephone left

2.   Not connected

3.   Microphone

4.   Microphone return

5.   Telephone right

6.   Telephone return

Microphone level: -64 dBu / -24 dBu switchable
Microphone impedance: >600 Ohm

Telephone level: +6 dBu nominal
Telephone output impedance: <50 Ohm
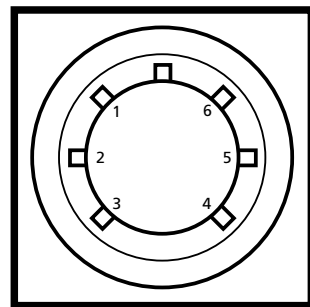
Tuchel 6-pole female; panel view (X104)

4.11 Reference input connector

Figure 14 Reference input connector
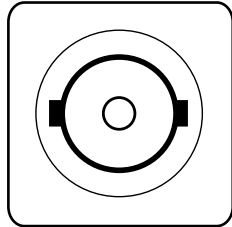

This conector is used to supply a 0.6 Vpp HD tri-level reference signal to the camera for genlocking.

BNC connector: panel view (X111)

4.12 Tracker communications connector

Figure 15 Tracker communications connector

1. On-air signal return
2. Tracker microphone return
3. Tracker microphone input
4. Production tracker
5. Sidetone/engineering tracker
6. Intercom return
7. Program sound tracker
8. Cameraman microphone
9. Tally control tracker (Cmos level, R out = 1k)
10. +12V; I max. = 100mA
11. +12V return

Microphone level: -58dBu/-20dBu switchable
Microphone impedance: 200 ohm

Telephone level: + 6dBu
Telephone output impedance: <10 ohm
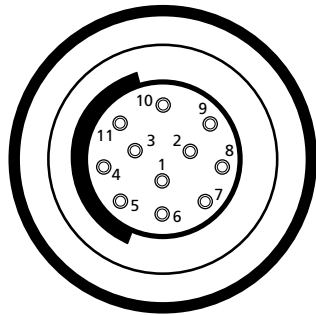
Fischer 11-pole female; panel view

Panel part number (X108): 3922 040 02463

4.13   Auxiliary connector

Figure 16 Auxiliary connector

Fischer 11-pole female; panel view

Panel part number (X109): 3922 040 02512
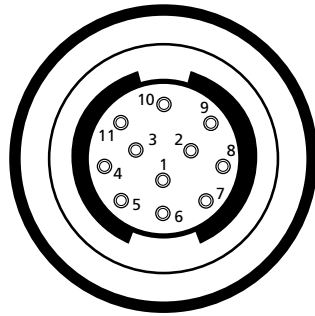
1. +5VL
2. 0VL
3. AN0
4. AN1
5. Spare
6. On-air n.c.
7. Private Data Camera - Base Station
8. Ground
9. Private Data Base Station - Camera
10. Ground
11. Shield

Private data input signals: 0 <0.8 Volt; 1 >2.4 Volt
max. level: +/-12 Volt
input impedance: >100 kOhm
baud rate: 2400 bits/s nom; 4800 bits/s max.

Private data output signals: C-MOS levels 5V
output impedance: <1 kOhm.

Analogue outputs (AN0 and AN1) output level: 0 - 5 Volt
output impedance: 100 Ohm

5 Install menu

Table 2 Install menu (HD Fibre camera)

Main menu items	Purpose
Video Mode	Select the acquisition mode
HD aspect ratio	16:9, Wide
Disable Camera	on/off
IR receiver	on/off
OnAir Lamp	on/off
Intercom	set intercom values
Audio	set gain and filter
Timing	set subcarrier and h-phase
Notch	on/off
Chroma	on/off
Aspect ratio	select aspect ratio values
Exposure	set lighting and clear scan values
Gain preset	set gain preset values
Autowhite	set autowhite speed and gain
Quick Smart Touch	on/off
Private Data	select data for intercom channels
Heater	on/off switch for SuperXpander heater
Buttons	assign functions to buttons