converter one & **converter one** hybrid

Welcome to the world of Converter One.

Our converter One is a compact high quality dual channel uni-directional converter. It converts two channels of fiber to SDI without changing anything to the integrity of the signal.

Think of Converter One as a combination of two completely separate converter channels, each channel doing its own conversion from fiber to SDI, independently and using its own fiber input port.

There are two different types of Converter One. They only differ in the way they handle power. Converter One gets its power from an external power supply and does not have power output (figure 1), where Converter One Hybrid gets its power over the hybrid cable, and does have power outpui (figure 2).

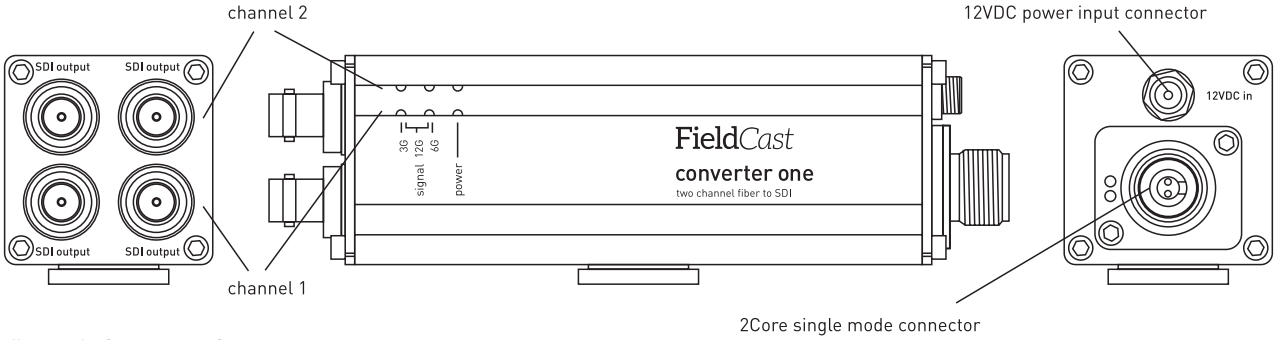


figure 1: Converter One

As can be seen, Converter One shows a power input connector, and underneath it a fiber optic connector with two fiber ports. Converter One Hybrid shows a power output connector, and underneath it a hybrid fiber optic connector which also has two fiber ports, but has two extra ports for power input as well.

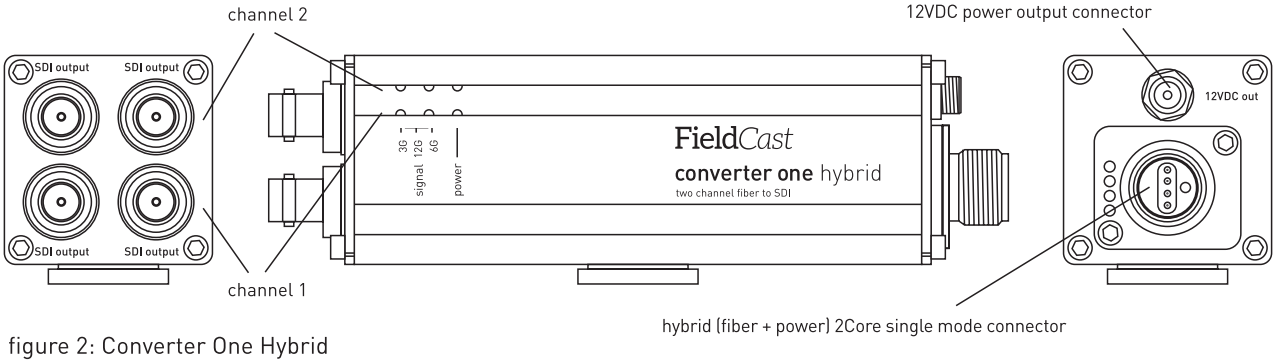


figure 2: Converter One Hybrid

Thus, Converter One gets its power from a local 12VDC power supply that taps into its power input connector, and it does not have power output, whereas Converter One Hybrid gets its power over the hybrid cable from a remote power source and it does have a 12VDC power output connector.

When comparing figure 1 and figure 2 you will see that SDI output connectors as well as the led indicators are exactly the same for both types. The only difference is the way in which they handle power.

It is clear now that most of the functionality, including the led indication, is exactly the same for both types. Converter One and Converter One Hybrid are like brother and sister.

3G, 6G and 12G versions

Converter One (Hybrid) comes in three different versions, 3G, 6G and 12G. The 3G version can handle all SDI signals up to 3G SDI (1080p60), the 6G version can handle all SDI signals up to 6G SDI (2160p30), and the 12G version can handle all SDI signals up to 12G SDI (2160p60).

We decided to offer these three different versions because many of our customers do not need more than 3G or 6G performance, and want to have the choice to invest in exactly the tools they need today. Converter One (Hybrid) 3G can be upgraded to Converter One (Hybrid) 6G or 12G, and Converter One (Hybrid) 6G in it's turn can be upgraded to Converter One (Hybrid) 12G.

Please note that, when upgrading, you cannot switch from Converter One to Converter One Hybrid or vice versa. Converter types cannot be upgraded, converter versions can.

the fiber optic connection

Converter One (Hybrid) uses a 2Core chassis connector and communicates with other fiber optic gear over a crossed-over cable connection. Channel 1 is set to port B of the connector, Channel 2 is set to port A.

figure 3: fiber optic ports on 2Core and 2Core Hybrid connectors

So the fiber to SDI conversion of Channel 1 uses port B as input for the fiber optic signal, while the fiber to SDI conversion of Channel 2.uses port A as input for the fiber optic signal. Port A and port B are completely separated, each transporting its own fiber optic signal.

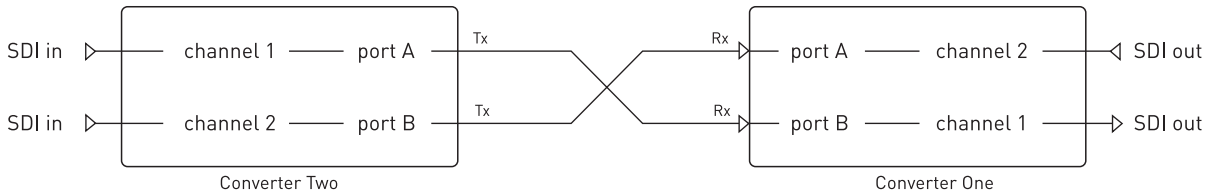


figure 4: cross-over connection between Converter Two and Converter One

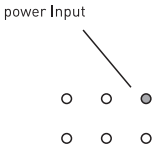
To connect Converter One to Converter Two (our two channel SDI to fiber converter) or to other fiber optic equipment you will need our 2Core SM (single mode) Main Cable, which has the correct crossed-over connections, so Channel 1 and Channel 2 won't be mixed up.

In general, you don't have to worry about the fiber optic connection when using FieldCast product. We have taken care of it all, and any FieldCast setup will be based on crossed-over cable connection.Things can become a bit tricky and confusing when you connect third party fiber optic equipment at one side or at both sides of the chain. Bottom line: the FieldCast part of the chain will always be a crossed-over part. Port A at one side talks to Port B at the other side.

powering up Converter One

Connect our 12VDC power supply (or any third party 12V source) to Converter One, using our adapter cable that bridges between 4-pin XLR connector and 5.5mm. coaxial plug. You can screw on the plug by hand. Once it's fixed, there will be a tight fit, and the power plug can't come loose. The XLR 4-pin male connector of the adapter cable expects DC+ on pin 4 and DC- on pin 1, which is standard pinout.

Connect the power supply to mains AC (110-240VAC). The power input led of the converter will light up after a short startup routine. It will show a slow cycling intensity change, telling you it actively monitors the input voltage.

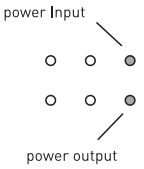


If the power input led starts to blink, this means that the input voltage is too high or too low, and you should check the power supply immediately.

powering up Converter One Hybrid

Connect a powered 2Core Hybrid Main Cable to the hybrid connector of the converter. Please note that the power source at the other end of the cable needs to bring a voltage of 14-40VDC to the converter.

When the DC power source is switched on, both the power input led and the power output led will light up after a short startup routine, telling you that the input voltage is nicely within the limits and the output voltage is 12VDC.



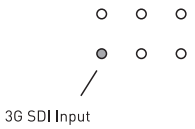
If the power input led starts to blink, this means that the input voltage is too high or too low, and you should check the power source immediately. If the power output led starts to blink, this means that output voltage is too low. This can happen when the input voltage drops below 14VDC, which causes the internal DC-DC converter to stop working properly.

running a fiber optic signal over channel 1

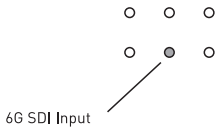
Connect a 2Core Main Cable to Converter One or a powered Hybrid Main Cable to Converter One Hybrid.

If at the other end of the cable you feed a valid source (i.e. an SDI signal converted to fiber) to port B, one or two leds in the upper row will light up telling you that a signal is being detected at channel 1.

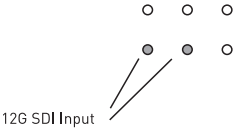
When you have a 3G version of Converter One, any fiber input signal (SDI converted to fiber) up to 3G will be detected, and the 3G led for channel 1 (fiber optic input over port B) will light up.



When you have a 6G version of Converter One, the unit will detect fiber optic signals up to 3G in exactly the same way as the 3G version. However, when it detects a 6G fiber optic signal, the 6G led for channel 1 (fiber optic input pver port B) will light up.



The 12G version of Converter One will detect fiber optic signals up to 6G in exactly the same way as the 6G version. When it detects a 12G fiber optic signal, both leds for channel 1 (fiber optic input over port B) will light up.



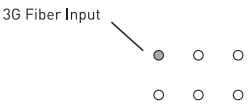
The moment Converter One (Hybrid) detects a valid signal at port B, it will convert, reclock and double output the signal over the channel 1 SDI output connectors.

running a fiber optic signal over channel 2

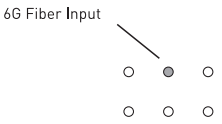
Channel 2 behaves in exactly the same way as does channel 1. The only difference is that it uses the two top row leds instead of the two bottom row leds to give you feedback on the input signal.

If at the other end of the still connected Hybrid cable you feed a valid source (i.e. an SDI signal converted to fiber) to port A, one or two leds in the lower row will light up telling you that a signal is being detected at channel 2.

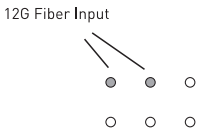
When you have a 3G version of Converter One, any fiber input signal (SDI converted to fiber) up to 3G will be detected, and the 3G led for channel 2 (fiber optic input over port A) will light up.



When you have a 6G version of Converter One, the unit will detect fiber optic signals up to 3G in exactly the same way as the 3G version. However, when it detects a 6G fiber optic signal, the 6G led for channel 2 (fiber optic input pver port A) will light up.



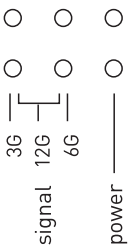
The 12G version of Converter Three will detect fiber optic signals up to 6G in exactly the same way as the 6G version. When it detects a 12G fiber optic signal, both leds for channel 2 (fiber optic input over port A) will light up.



The moment Converter One (Hybrid) detects a valid signal at port B, it will convert, reclock and double output the signal over the channel 1 SDI output connectors.

led indication in a nutshell

The lower middle and lower left led refer to channel 1 (fiber input), the upper middle and upper left led refer to channel 2 (fiber input). Left led lighting up means 3G detection, middle led lighting up means 6G detection, left + middle led lighting up means 12G detection. Upper right led refers to power input, lower right led refers to power output (Converter One Hybrid only).



converter handling

The sturdy enclosure of Converter One is built out of aluminum and does not need special maintainance. It can be used indoor and outdoor without any problems, as long as it is not exposed to heavy rain or other environments in which the enclosure comes in direct contact with water or mud..

We provided for a stainless steel pedestal with standard 1/4-20 insert, attached to the bottom plate of the converter enclosure, to fix it to pod, rig or clamp.