

FiberDrive™ Operation Sheet - with Pins

This FDRV model has its interface through the circuitboard pins on the bottom of the package. The pin-out is shown below. When looking at the top of the module and the fiber exiting from the left, pin#1 is the lower left hand corner, and pin#16 is the upper left hand corner.

Pin No.	Name	Type	Description
1	NC	Passive	No connection
2	NC	Passive	No connection
3	GND	Active	Ground
4	set	Analog input	Constant current or constant power setting , Max ~5V
5	RS	Floating	Reserved – DO NOT GROUND
6	APC	Active	Connect to Pin 8, Module function Automatic Power Control.
7	ACC	Active	Connect to Pin 8, Module function Constant Current Control.
8	CC	Active	Control Common
9	VCC	Power	5V +/- 10%.
10	GND	Active	Ground
11	RS	Floating	Reserved – DO NOT GROUND
12	RS	Floating	Reserved – DO NOT GROUND
13	RS	Floating	Reserved – DO NOT GROUND
14	NC	Passive	No connection
15	NC	Passive	No connection
16	NC	Passive	No connection

NOTE: *Optical fiber pigtails are easily damaged. Never handle the device by the pigtail, but always grab the module by the metal housing.*

NOTE: *If your unit comes with a collimator, avoid having to remove the connector. This allows dirt to enter the collimator and also may affect the optical beam quality.*

NOTE: *Clean the tip of the fiber optic pigtail with isopropyl alcohol and a lint free swab for best results.*

NOTE: *To prevent ESD damage to the module, a properly grounded wrist strap should be worn when making connections to the pins.*

NOTE: *When inserting or removing the fiber tip from the collimator, or when making and breaking a fiber-to-fiber connection, the optical power should be OFF to prevent damage to the laser diode.*

NOTE: *The FDRV module normally requires no heat-sink, but it depends on the laser in the module. Maximum lifetime is achieved with the use of a heat-sink. The bottom of the package in the front of the module, underneath the fins, should make solid contact with a metal heat-sink. A small amount of thermal grease is recommended.*

To begin using your FDRV immediately, there are three connections that have to be made. The first is to decide if you wish to operate in APC or ACC mode. For APC mode, connect pin#6 to pin #8. For ACC mode, connect pin#7 to pin#8. The lowest noise and short term power stability is achieved through the ACC mode, but the output power is more sensitive to the voltage on SET pin#4.

NOTE: *When going between either mode, first turn the output power level all the way down in the prior mode (i.e. make the voltage on pin#4 SET = 0) before switching modes. This will prevent any current damage upon power up in the second mode.*

The second is to bring power to the module. Connect the positive terminal of the supply to pin#9 and connect the GND to pins#3 and #10. The supply should be +5V +/-10%. For supplies other than bench-top units, extra filtering may be necessary for best noise performance. After turning on the power, the FDRV stabilizes rapidly. The power out may slowly change until the temperature settles.

The third is to bring a voltage to pin#4 the Set pin. This voltage varies the output power in APC mode or the drive current in ACC mode. The pin draws no current and the voltage ranges from 0 to about 5V, depending on the laser and the mode of operation. The final test report for your FDRV will list the voltage in APC mode and ACC mode for which the device produces its rated output power. In addition, the variance of voltage with power for this pin, in both APC and ACC mode, are graphed with the final test report.

NOTE: *For safety, make sure the voltage on pin#4 =0V when first powering up the unit.*

NOTE: *Care must be used not to drive this pin over voltage levels indicated in the graphs to prevent damage to the module.*

The FTEC with pins may be modulated up to a 1kHz rate. The drive voltage is typically a square wave swinging around GND. The pk-pk voltage is around +/-250 mV. There may be some variation among modules so its best to start with the amplitude driver at a minimum value and slowly raise the pk-pk voltage until the desired performance is achieved.

Further information may be found in our application section of our website, <http://www.blueskyresearch.com/technicalnotes.htm>

Thank you and enjoy your FiberDrive module!