

FOUR CHANNEL PHOTOBREAM CONTROLLER

ENV-253

USER'S MANUAL

DOC-016

Rev. 1.4

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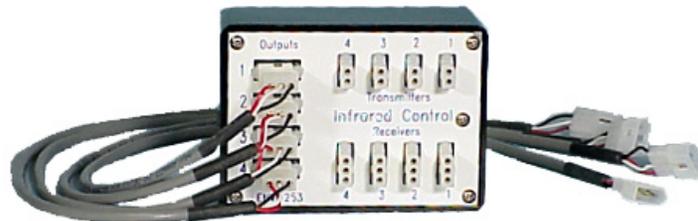
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CHAPTER 1 | INTRODUCTION

This device controls up to four ENV-253SD Infrared Source and Detector units (sold separately). This four-channel photobeam controller operates using 28 Volts DC provided with all MED Associates, Inc. behavioral control systems. The ENV-253 synchronizes a pulse stream emitted by each light source with the activation of each detector at a very fast rate. Pulsing the light produces a beam that is better focused and casts a sharper "shadow". Synchronizing the source and detector at very high speed simulates a continuous beam without interference from adjacent beams. Each ENV-253SD source and detector pair may be placed a distance of 0.25" to more than 30" apart and each pair may be as close as 0.75" center to center with the nearest pair without interference. A ground signal is produced when an aligned beam is broken.

Specifications

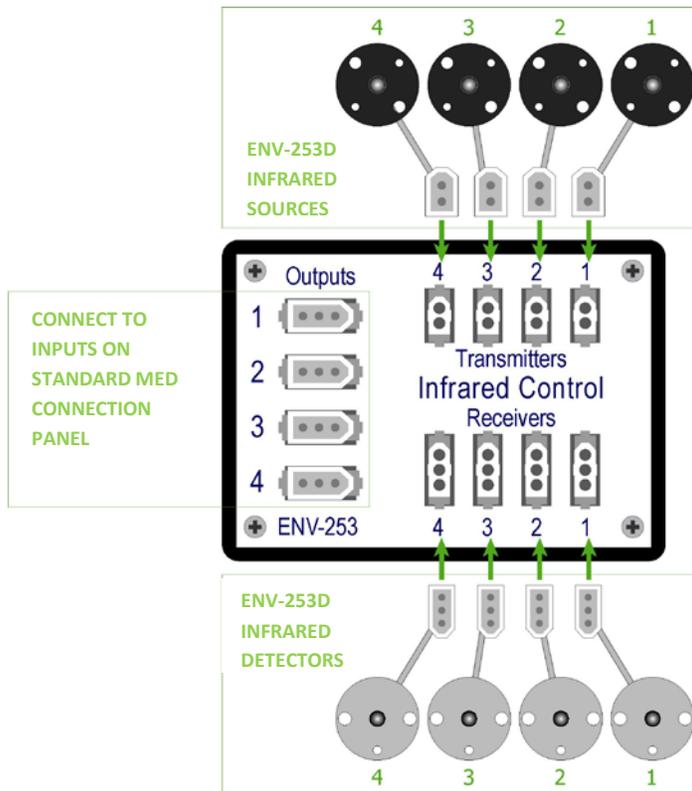
Operating Voltage:	28 Volts DC
Operating Current:	25 mA
Carrier Frequency:	40 KHz
Optical Wavelength:	940 nanometers



CHAPTER 2 | CONNECTIONS

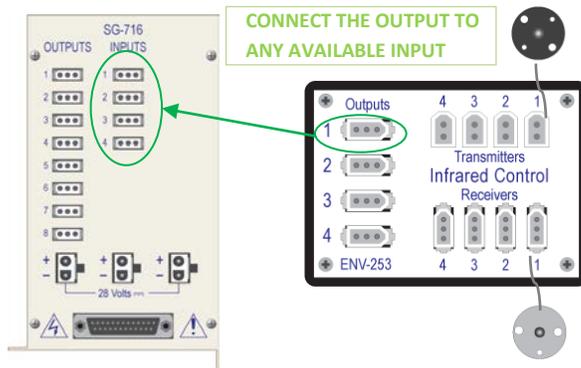
NOTE: Be sure that the interface and power supply are switched off before making any of these connections.

Figure 2.1 - Connect ENV-253D Infrared Sources and Detectors



Once the connections shown in Figure 2.1 are complete, turn the interface cabinet and connection panel power supply (or supplies) ON. It is not necessary for four ENV-253SD pairs to be connected for the ENV-253 device to operate see Figure 2.2. Align the photo beams so that the input indicator associated with each beam is OFF. Each time the beam is broken the LED indicator on the SmartCtrl™ or SuperPort™ module will come on.

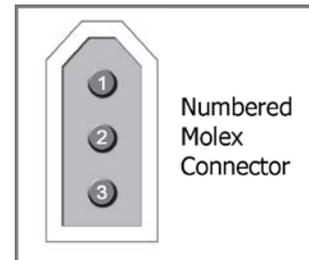
Figure 2.2 - Single IR Pair Connection to SG-716



MED Test may be used to determine that the module is functioning. Inputs set to transition will produce single counts each time the beam is broken and inputs set to level will produce continuous counts for as long as the beam is broken. These settings are explained in further detail in the manuals for the interface modules.

Wiring

Molex Pin #	Function	Wire Color
1	28V Ground	Black
2	Operate	White
3	+28 Volts	Red



Photobeam Alignment

To test the alignment of the photobeams, connect the positive lead of a voltmeter to the +28 Volt terminal of the power supply and the negative lead to the output from Pin 2. The greatest degree of alignment is confirmed when the voltage is at or near 0 volts.

Transmitter Aperture Size

The size of the source aperture determines the infrared beam width and, to some degree, the distance over which a standard ENV-253SD will function. The factory-drilled hole has a diameter of 0.120” and allows the source and detector to function at up to approximately 18” apart. For greater distances it is recommended that the aperture be enlarged gradually, but not to exceed 0.187”. Prior to enlarging the aperture, be sure to remove the LED by unscrewing the two small machine screws that hold the housing together.

APPENDIX A | CONTACT INFORMATION

Please contact MED Associates, Inc. for information regarding any of our products.

Visit our website at www.med-associates.com for contact information.

For technical questions, email support@med-associates.com.