



User Manual / Configuration Guide



DDC-2 Direct DC Joystick Controller

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DISCLAIMER

J-Systems, Inc. makes no warranties, either express or implied, regarding the enclosed DDC-2 Direct DC Joystick, its merchantability or its fitness for any particular purpose. Further, J-Systems, Inc. assumes no responsibility for any damages, losses or claims resulting from the use or misuse of this equipment. The extent of any liability is expressly limited to the original purchase price of the equipment.

1.0 - INTRODUCTION

Congratulations on your purchase of the DDC-2 Direct DC Joystick controller.

This product incorporates a uniquely designed electro-mechanical joystick mounted in a rugged, waterproof, polycarbonate enclosure suitable for wired mobile or fixed control of a JPTH-13M or JPTH-35 Pan-Tilt Head.

1.1 - Concept

This product has been carefully designed and manufactured for the intended purpose of manually controlling a JPTH-13M or JPTH-35 Pan-Tilt Head. The DDC-2 allows pan, tilt, and diagonal movements of both P/T heads provided the joystick is moved away from its center-off position.

The DDC-2 will operate using either a 12VDC or 24VDC power supply depending upon the operating voltage of the JPTH-13M or JPTH-35 (generally 12VDC). There are no electronics or serviceable parts inside the DDC-2. Two water proof connectors are provided on the front of the DDC-2; a metal 1/2 NPT bulkhead fitting for DC power and a circular metal connector to connect to the P/T head.

While there is no limit to the length of cable between the pan / tilt head and the DDC-2 controller, using more than 50 feet of 18 or 20AWG multi-conductor cable may require the use of a higher voltage power supply to compensate for the voltage drop across the cable. As the voltage is decreased at the pan-tilt head, the DC motors inside the head will run slower and slower.

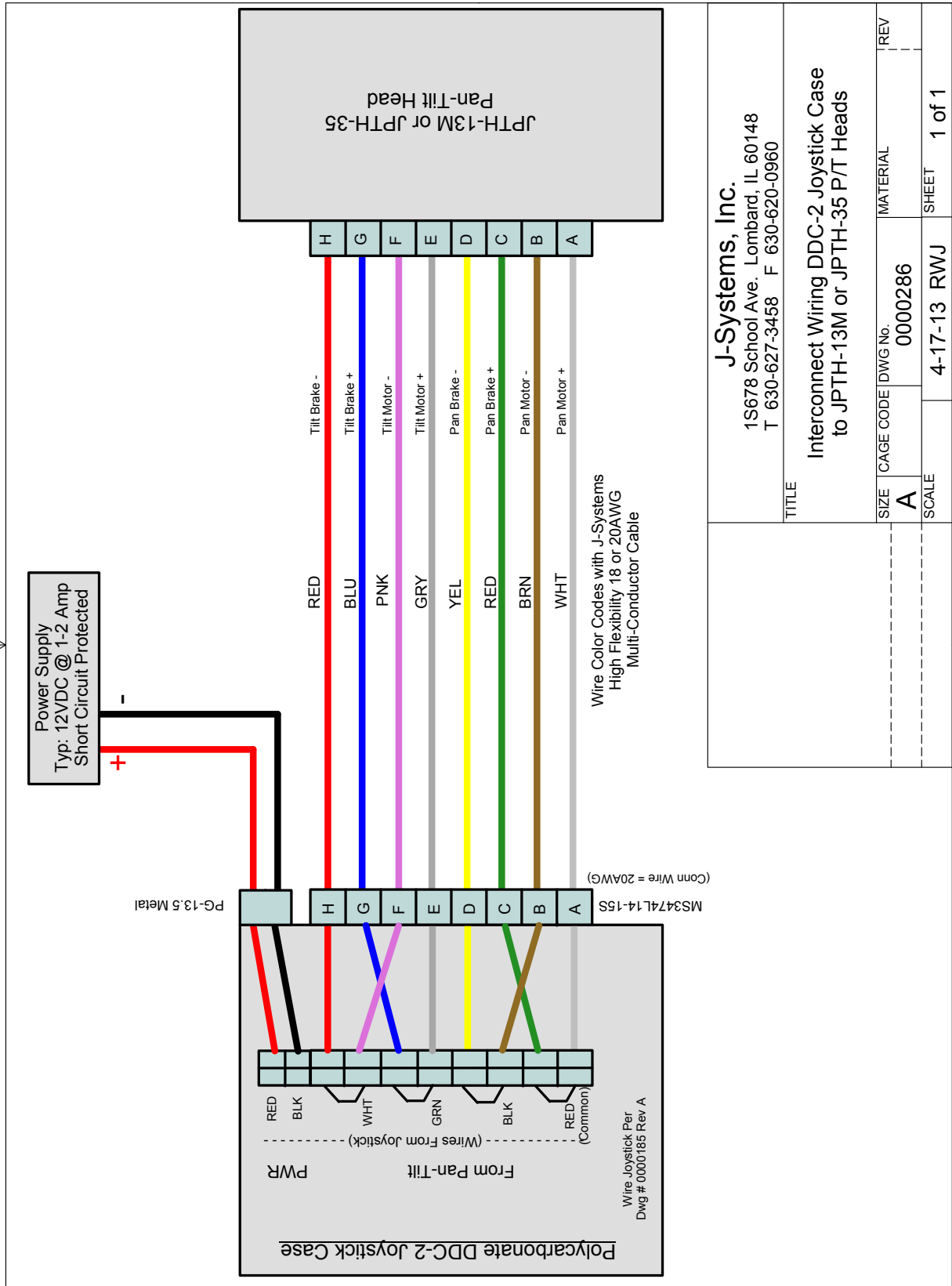
1.2 - Required Items and Cable Assembly

If you did not purchase a pre-made, high flexibility cable assembly from J-Systems, you will need to fabricate a cable assembly of the proper length for your application. We recommend using an 8-conductor, stranded (18 or 20AWG) shielded cable that can withstand flexing in cold temperatures without fracturing.

Follow the wiring diagram, shown on the next page, terminate each end of the cable.

You will also need a DC power source capable of supplying 1 Amp (for the JPTH-13M) or 2A for the JPTH-35 at the voltage required for your pan-tilt head (typically 12VDC). Be sure to install an inline fuse if operating from any power supply that does not offer short circuit protection. For example, if you are using a battery, be sure to install your own in-line fuse for safety.

1.3 Interconnect Wiring Diagram



2.0 - OPERATION

Operation of the DDC-2 with a JPTH-13M or JPTH-35 Pan-Tilt Head is very straight forward. Refer to the photo on the next page and connect + and - 12VDC to the identified terminals inside the DDC-2 enclosure (open lid by removing 4-screws).

Tip: Testing should be completed on the bench before the Pan-Tilt Head is mounted in its final location and the cable run completed.

Once the interconnect cable is attached to the Pan-Tilt Head and to the DDC-2, it is now time to connect your power supply.

Tip: For a 20AWG cable, you might expect to lose 0.250 VDC per 25 ft of cable (less for 18AWG wire). This will result in a slight reduction in pan and tilt motor speeds. If you have an adjustable power source, you can of course always increase the voltage slightly to compensate for the voltage drop across the cable length. Obviously the longer the cable, the greater the voltage drop will become.

CAUTION

Be sure to set the mechanical limits on the outside of the Pan-Tilt Head to prevent the unit from causing damage to itself when the joystick is operated. Please refer to the JPTH-13M or JPTH-35 PT Head User Manual for these adjustment.

Please be careful not to pinch your fingers in the Pan-Tilt Head when it is moving. The JPTH-35 is capable of breaking a bone so please be careful.

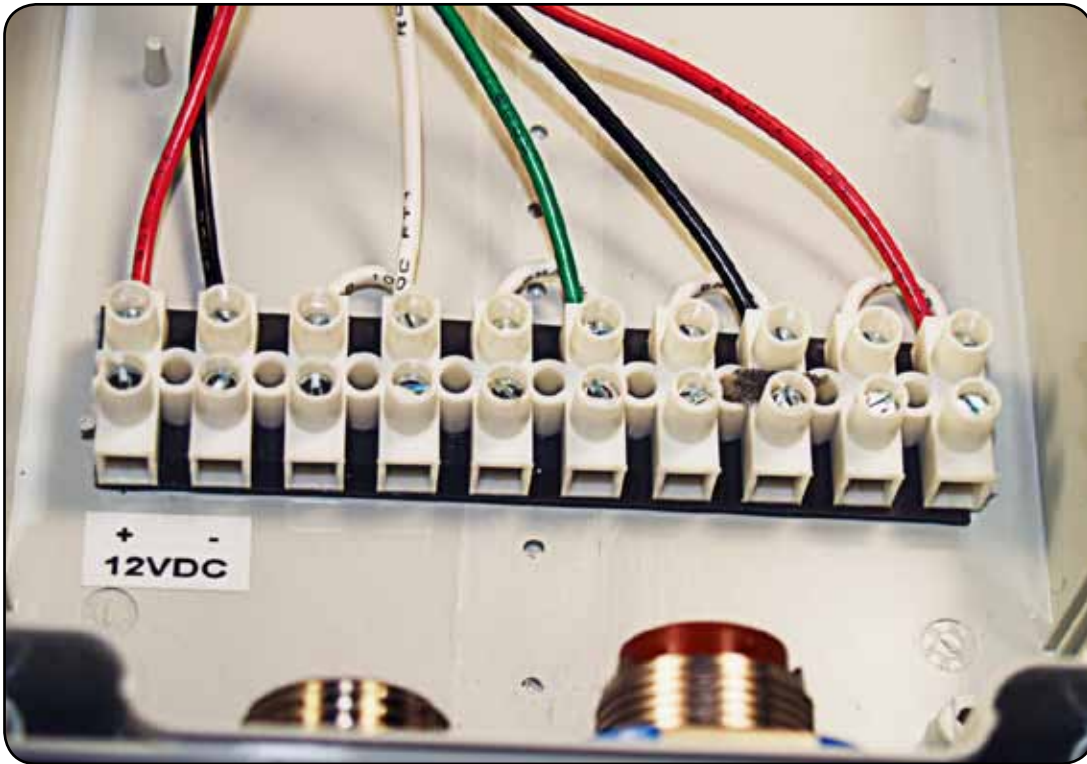
Once power has been applied, you should be able to move the Pan-Tilt Head using the DDC-2 joystick. The motion of the Pan-Tilt Head is that which would be seen if a camera were mounted on top of the unit (the connector on the Pan-Tilt Head is at the rear of the camera). Moving the joystick to the right should cause the Pan-Tilt Head to pan to the right. In a similar manner, the pan left, tilt up and tilt down motions should all work.

When the joystick is moved in a diagonal direction between tilt and pan, both the pan and tilt motors will actuate causing the unit to move in a diagonal direction.

At this time, if everything is working as expected, disconnect your test setup and mount the Pan-Tilt Head in its final location and make your final cable run for a permanent installation.

Tip: When using a shielded cable, the shield is only connected at one end of the cable; the Pan-Tilt end. It is good practice to ground the Pan-Tilt Head and its related metal mounting arm / adapter etc using an appropriately sized grounding wire that meets local electrical code.

2.1 Inside View of DDC-2 Enclosure



Connect + and - 12VDC power to the left-hand terminals labeled "+ / - 12VDC".

Feed the power cable through the metal 1/2" NPT bulkhead fitting. With the cable jacket showing inside the enclosure, tighten the outer nut of the 1/2" NPT fitting with a wrench.

3.0 TECHNICAL SUPPORT

Technical support is available for no charge during normal business hours.

Business Hours:

Monday - Friday 9:00AM to 4:00PM CST

Contact Information:

Tele: 630-627-3458

Fax: 630-620-0960

E-Mail: info@J-Systems.com

4.0 SUPPORT INFORMATION

4.1 Warranty Policy

The DDC-2 carries a 1-year manufacturer's warranty. This warranty applies to failure of the product under normal operating conditions. Situations that are not covered by this warranty include, but are not limited to the following stresses and or misuses:

- Lightning Strikes
- Attempted Repair By An Unauthorized Individual
- Running Excessive Current Through the DDC-2

Any other damage that in J-Systems, Inc.'s opinion have been caused as a result of abnormal or abusive use will also void the warranty.

To return a unit for repair, an RMA (Return Material Authorization) must be obtained prior to sending the unit back. Units received without a prior RMA being issued will be returned to the sender unopened.

When returning a unit for warranty or out of warranty repair, the cost of shipping back to the factory will be borne by the customer. Warranty repaired items will be returned to the customer postage free.

4.2 Specifications

The following are the specifications that apply to the DDC-2. These specifications are subject to change at any time.

Joystick:	Electro-mechanical - IP 67 Rated
Current Limit:	6 Amp Peak motor current
Functions:	Provides Pan, Tilt, and Diagonal Movements
Warranty:	1-year
Operating Voltage:	0-28VDC
Operating Temperature	-30 to +60C
Enclosure:	Polycarbonate - IP-65 Rated
Color:	Light Grey
Size:	9"L x 5"W x 5"H (includes mounted connectors and the joystick handle)
Weight:	~1 Lbs
Connectors:	1/2" NPT metal bulkhead for power - Water proof Circular metal twist lock bulkhead for the P/T head Water proof

Have a Different Head or Want to Use 24VAC Power

The DDC-2 Joystick Controller has been designed to work specifically with the JPTH-13M or JPTH-35 PT Head running on 12VDC or 24VDC ONLY.

In the event that you wish to use a different PT head other than these two units from J-Systems, Inc. or have a PT head with 24VAC motors, please consult the factory as a special unit will need to be fabricated for you. Please be prepared to send us a schematic of your PT head, Peak current remains at 6 Amps.