T150/R160
User Manual for the Steelhead Marine Remote Davit Controller

The OMNEX T150 / R160 is a portable, long range, programmable, 19 - function radio remote control unit for fixed and mobile equipment. Designed as a safe, compact and easy-to-use radio remote control, the ORIGA puts complete control where it is needed most: with the operator.

Frequency hopping spread spectrum technology was originally developed by the U.S. military to prevent interference or interception of radio transmissions on the battlefield. Frequency hopping devices concentrate their full power into a very narrow signal and randomly hop from one frequency to another within a designated frequency band. If they encounter interference on a particular frequency, the devices error check the affected data, hop to another point on the spectrum, and resume communications on subsequent hops. Since there are always spaces without interference somewhere in the allotted radio spectrum, a frequency hopping device will use those spaces to complete a transmission.

FCC Rules and Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by OMNEX will void the user's authority to operate the equipment.
This product is intended for fixed installation applications. In order to comply with FCC/ISC adopted RF exposure requirements, installation of this transmitter system's antennas must be performed in a manner that will provide at least a 6 foot (2m) clearance from the front radiating aperture to any user or member of the public.

FCC	Part 15.247
ISC	RSS 210

Warranty

OMNEX Control Systems Inc. warrants to the original purchaser that the OMNEX products are free from defects in materials and workmanship under normal use and service for a period of ONE YEAR, parts (EXCLUDING: SWITCHES, CRYSTALS, OR PARTS SUBJECT TO UNAUTHORIZED REPAIR OR MODIFICATION) and labor from the date of delivery as evidenced by a copy of the receipt. OMNEX's entire liability and your exclusive remedy shall be, at OMNEX's option, either the (a) repair or (b) replacement of the OMNEX product which is returned within the warranty period to OMNEX freight collect by the OMNEX APPROVED carrier with a copy of the purchase receipt and with the return authorization of OMNEX. If failure has resulted from accident, abuse or misapplication, OMNEX shall have no responsibility to repair or replace the product under warranty. In no event shall OMNEX be responsible for incidental or consequential damage caused by defects in its products, whether such damage occurs or is discovered before or after replacement or repair and whether or not such damage is caused by the negligence of OMNEX Control Systems Inc.

Install Batteries

Remove the battery cover on the back of the T150, and install the four AA alkaline batteries as shown in Figure 1.

Figure 1

Power Up T150

Activation of any switch will cause the T150 to power up. However as a safety feature, the [EStop] switch must be pressed and released, or if already pressed, released within 10 seconds for unit to remain powered up.

Using The T150

The ACTIVE LED will flash two times per second indicating that the T150 is transmitting to the R160. When a function switch is used, the ACTIVE LED will flash brightly upon activation of the switch and return to flashing at a rate of two times per second when there is no switch activity.

During normal operation the LOW BATT. LED will flash to indicate a low battery condition.

The [EStop] button is used for both an emergency shutdown as well as a safe way of powering down the T150 after operation.

Each switch has a device specific label to identify its function.

The Trigger is a Proportional Control switch used in conjunction with a function switch.

Setting ID Codes

Required when replacing either the Transmitter or Receiver

The Transmitter has its ID Code factory programmed. Its matching receiver needs to have this same code programmed into it. To do this, the Receiver needs to have its cover removed - refer to Figure 2. Follow the procedure below to program the Receiver ID Code to match its corresponding Transmitter.

1. Release the [EStop] switch on the T150.

2. Turn the T150 on by toggling the ROT switch to the UP position.

3. While holding the ROT switch in the UP position, press and release the [EStop] switch. This enables the "Download Password" mode.

4. Release the ROT switch. The ACTIVE LED will flash once per second.

5. Press and hold the [SETUP] button on the R160 for 5 seconds. The STATUS LED on the R160 will flash once per second while depressed and then begin flashing rapidly indicating that the R160 is ready to receive "Configuration Data" from the T150. Release the [SETUP] button after the STATUS LED begins flashing rapidly.

6. Momentarily toggle the ROT switch to the UP position; this enables the T150 to send "Configuration Data" to the R160.

7. Press the [EStop] switch to power down the T150, and restart the T150 - refer to STEP 2.

Current Control Module Calibration

Permits the user to adjust minimum and maximum currents

1. Release the [EStop] on the T150.

2. Turn the T150 ON by toggling the ROT switch to the DOWN position.

3. While holding the ROT switch in the DOWN position, press and release the [EStop] switch. This enables the "Download Password" mode.

4. Release the ROT switch. The ACTIVE LED will flash once per second.

5. Toggle the ROT switch to the DOWN position. The ACTIVE and LOW BATT. LED's will flash alternately once per second. This confirms the T150 is sending "Calibration Data" to the R160.

6. Select and hold one of the "Proportional Functions"(Except ROT).

7. With the trigger OFF (fully released), the "MIN" level is set. The "MIN" level may be increased by toggling the ROT switch up or decreased by toggling the ROT switch down.

8. With the trigger ON (fully engaged), the "MAX" level is set. The "MAX" level may be increased by toggling the ROT switch up or decreased by toggling the ROT switch down.

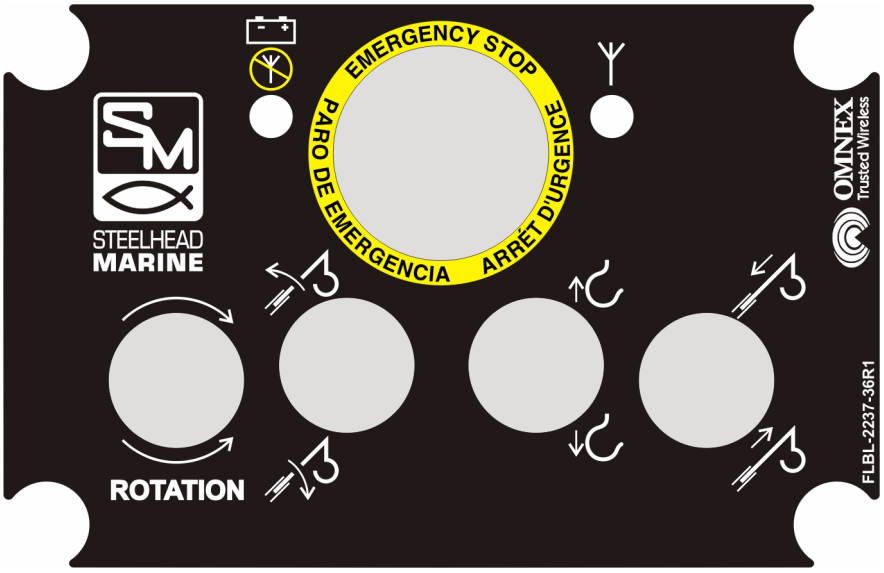
9. To reset the "MIN" and "MAX" settings to the factory default, hold the ROT switch in either the UP or DOWN position for 5 seconds.

10. To exit, press the [EStop] switch.

Transmitter / Receiver Replacement and Service

In order to program the R160 or replace the fuse, you will first need to remove the circuit board from the housing of the R160. This is done by releasing the two side tabs on the housing, and sliding the connector block and circuit board out of the housing until the four STATUS LED's are visible and the [SETUP] SW1 button is accessible. See Figure 2.

Also refer to Setting ID Codes for a step by step procedure of setting ID Codes to match on both the Transmitter and the Receiver.



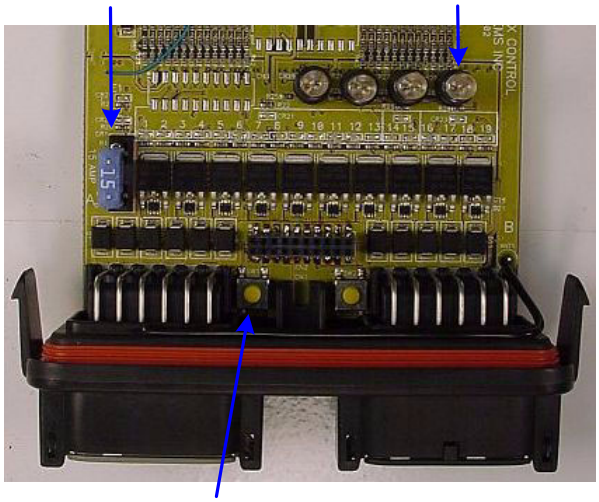


Figure 2

T150 / R160 Switch Function Table				
Function	**Control**	**Pin**	**Color Code**	**Description**
N/A	I/O 1	A7	Orange (Green)	
N/A	I/O 2	A8	Red (Green)	
N/A	I/O 3	A9	White (Red)	
N/A	I/O 4	A11	Blue (Red)	
BOOM EXTEND IN	I/O 5	A10	Orange (Black)	
BOOM EXTEND OUT	I/O 6	A12	Orange (Red)	
WINCH UP	I/O 7	B1	White (Red/Black)	
WINCH DOWN	I/O 8	B2	Red (Black/White)	
BOOM UP	I/O 9	B3	Green	
BOOM DOWN	I/O 10	B4	Green (Black/White)	
ROT CW	I/O 11	B5	White	
ROT CCW	I/O 12	B6	Orange	
TRIGGER	I/O 14	A4	Green (Black)	Proportional Current Control
ENABLE	I/O 19	B12	Black (Red)	On when any output is on
POWER		A6	Red	+ 9 to 30VDC
GROUND		A3	Black	GROUND
E-STOP		A5	Black (White/Red)	Switches to POWER with link

Troubleshooting

The R160 has 4 LED's that are used to indicate device status:

ESTOP LED

GREEN - indicates RUN
RED - indicates ESTOP
Flashing RED - indicates fuse blown or relay fault

FUNCTION/FAULT LED

GREEN - indicates function ON, no fault
RED - indicates no voltage to relay, short to ground or blown fuse
Flashing RED - indicates short to supply or shorted output relay
Not lit - indicates no function

LINK LED

GREEN - indicates Link
RED - indicates No Link

STATUS LED

GREEN - indicates STATUS OK
RED - indicates unrecoverable fault; requires factory authorized service
Flashing RED - indicates low battery

The **T150** has 2 LED's that display the mode and status of the device

ACTIVE LED

Momentarily ON or Flashing indicates Power Up procedure or Programming status. LED will flash with each function during normal operation indicating Transmit Status to the R160 is good

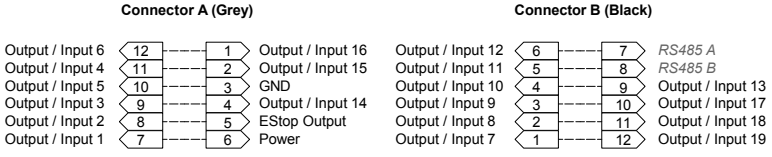
LOW BATT. LED

Momentarily ON or Flashing indicates Power Up procedure or Programming status
During normal operation, this LED will only flash to indicate battery low

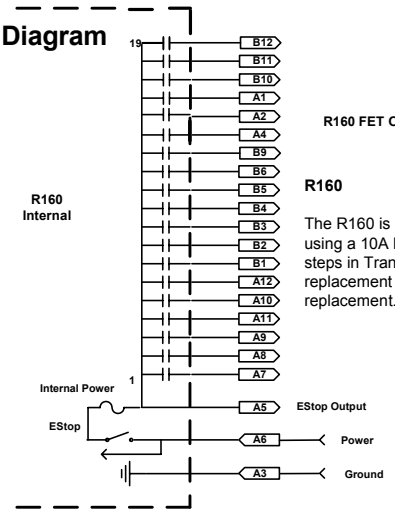
ACTIVE and LOW BATT. LED's

Both LED's flashing in sync indicates one of the switches is stuck

Deutsch Connector Pin Assignments



I/O Diagram



Output / Input

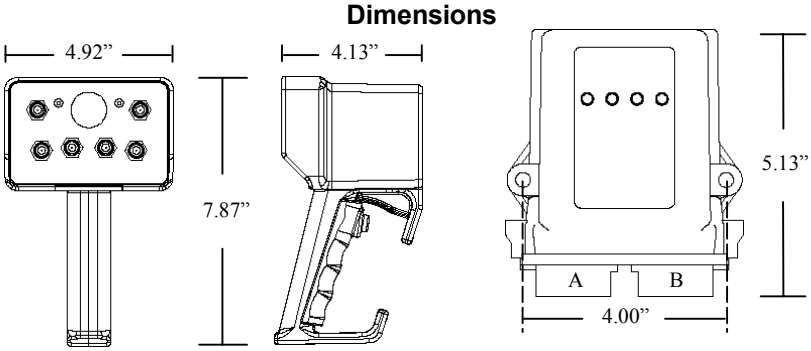
19 x FET, monitored, 3A maximum each, total combined current 10A

Replaceable Parts

Fuse	MINI® Fuse Type,10A LittelFuse OMNEX (p/n F0047) or equiv.
Mating Plugs	OMNEX (p/n's J0418 / J0419)
Pins	OMNEX (p/n J0417)
Sealing Plug	OMNEX (p/n J0421)
Wedge	OMNEX (p/n J0420)
Switches	OMNEX (p/n S0042)
EStop Switch	OMNEX (p/n S0072)
EStop Contact Block	OMNEX (p/n S0071)
Batteries	OMNEX (p/n B0010) 4 x AA

NOTE: A Current Control Module may be installed as an option giving the user Proportional Control on output 14 of the R160 - refer to Current Control Module Calibration for Proportional Calibration procedures.

Dimensions



HOP LINK

GET CONTROL GET OMNEX

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