



**VALLEY TRACKERSP
INSTALLATION MANUAL**

0997067_H





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ABOUT THIS MANUAL

This manual illustrates the proper installation of the TrackerSP in a Valley control panel, mounted on the pivot point of an irrigation machine and equipped with either of the following control modules:

- PRO2 v8.40, PRO v7.15 and 7.25, Select (with serial port) or Select2 modules.

All information in this manual is based on information available at the time of printing. Valmont Industries Inc. reserves the right to make changes at any time without notice and without incurring any obligation. Specifications are applicable to equipment sold within the United States and may vary outside of the United States.

WARNING

THE ASSEMBLY OF THESE COMPONENTS, INCLUDING ADJUSTING TESTING AND TROUBLESHOOTING SHOULD BE PERFORMED ONLY BY AN AUTHORIZED VALLEY DEALER.

TOOLS NEEDED

- Small straight screw driver
- Adjustable wrench
- Hammer
- Punch
- Computer W/HyperTerminal
- Serial Cable DB-9 Male to Female
- Drill
- 3/16" (4.75 mm) Drill Bit

Recognize Safety Information

This irrigation equipment can be powered by high voltage, which can be extremely dangerous if used improperly. For maximum safety and optimum performance of the machine, all owner/operators and maintenance personnel must read and understand the owner/operator manual(s), all safety messages in this manual and safety signs/decals on the machine before operating this equipment.

Anyone assembling, operating, servicing or maintaining this machine must read and understand all operation, maintenance, troubleshooting, testing, installation, assembly instructions and all safety messages in this manual before operating the machine or beginning any maintenance, troubleshooting, testing, installation or assembly of components.

These instructions alert you to certain things you should do carefully; if you don't, you could hurt yourself or others, hurt the next person who operates the equipment, or damage the equipment.

Safety Messages

Safety messages in this manual are preceded by the hazard symbol and one of three words: DANGER, WARNING or CAUTION. These messages alert you to potential hazards that could hurt you or others and or cause property damage.



This HAZARD SYMBOL is used to alert you to information about unsafe actions or situations, and may be followed by the word DANGER, WARNING or CAUTION.

DANGER

The HAZARD SYMBOL used with the word DANGER describes immediate hazards that can result in severe personal injury or death.

WARNING

The HAZARD SYMBOL used with the word WARNING describes unsafe actions or situations that can result in severe injury, death and/or major equipment or property damage.

CAUTION

The HAZARD SYMBOL used with the word CAUTION describes unsafe actions or situations that can result in injury, and/or minor equipment or property damage.

Information Messages

Important information messages in this manual are preceded by the word NOTE.

NOTE

The word NOTE is used to alert you to information that describes procedures or tips to help you install, operate or maintain your equipment properly.

SAFETY

Use Of Personal Protective Equipment

- People working in areas where there are potential electrical hazards must use, personal protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed. Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations (Standards - 29 CFR) Safeguards for personnel protection. - 1910.335, or applicable national, state or local regulations, for additional information.
- Personal protective equipment must be maintained in a safe, reliable condition and periodically inspected or tested.
- Protective shields, protective barriers, or insulating materials must be used to protect each person from shock, burns, or other electrically-related injuries while that person is working near exposed energized parts which might be accidentally contacted or where dangerous electric heating or arcing might occur. When normally enclosed live parts are exposed for maintenance or repair, they must be guarded to protect unqualified persons from contact with the live parts.
- Safety signs and tags. Safety signs, safety symbols, or accident prevention tags must be used where necessary to warn people about electrical hazards which may endanger them.

Conductive Materials And Equipment

Materials and equipment that can conduct electricity must be handled in a way that will prevent them from contacting energized power lines, exposed conductors or circuit parts.

- When handling long conductive objects (such as but not limited to truss rods, pipes, angles and ladders) in areas with energized power lines, exposed conductors or circuit parts, work practices (such as the use of insulation, guarding, and material handling techniques) must be used to minimize the hazard.
- Portable ladders must have non-conductive side rails.
- Do not wear conductive articles of jewelry and clothing (such as but not limited to watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) that could come in contact with energized power lines, exposed conductors or circuit parts.

Fall Protection

Identify potential fall hazards and determine if fall protection equipment is appropriate for the task, before beginning the work. Pay attention to hazards associated with routine and non-routine tasks. Inspect fall protection equipment (harnesses, lanyards) and devices (guardrails, tie-off points) before each use. Use fall protection equipment if required for the job. Be sure the fall protection equipment is right for the task, fits properly, and is in good condition. Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations Standards - 29 CFR 1926.500, 1926.501 and 1926.502, or applicable national, state or local regulations for more information.

- When using scaffolds, make sure there is proper access, full planking, stable footing, and guard railing.
- When using a boom lift, keep feet firmly on the platform of a boom lift, use fall protection equipment tied-off at all times to the guardrail or tie-off point.
- When using a ladder, make sure the ladder is non-conductive and the correct size for the task. Read the ladder user instructions and be sure the ladder is in good condition. Make sure ladder is set on stable footing and at the correct angle.

Minimum Working Clearance

To reduce the risk of injury, all persons require adequate working clearance around the electrical panel or other electrical equipment. The table below identifies the minimum working clearance needed. Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations (Standards - 29 CFR) Safeguards for personnel protection. -1910.303(g)(1)(i), or any other applicable national, state or local regulations, for additional information.

MINIMUM WORKING CLEARANCE 0-600 VOLTS				
WIDTH OF WORKING CLEARANCE AREA	HEIGHT OF WORKING CLEARANCE AREA	★ MINIMUM WORKING CLEARANCE IN FRONT OF ELECTRICAL PANEL/EQUIPMENT		
		EXPOSED LIVE PARTS ON ONE SIDE OF WORK SPACE AND NO LIVE GROUNDED PARTS ON THE OTHER SIDE.	EXPOSED LIVE PARTS ON ONE SIDE OF WORK SPACE AND LIVE GROUNDED PARTS ON THE OTHER SIDE.	EXPOSED LIVE PARTS ON ONE SIDE OF WORK SPACE AND EXPOSED LIVE PARTS ON THE OTHER SIDE.
30in.(760mm) MINIMUM OR WIDTH OF ENCLOSURE, WHICH EVER IS GREATER	78in.(1980mm) MINIMUM OR HEIGHT OF ENCLOSURE, WHICH EVER IS GREATER	36in.(915mm) MINIMUM	42in.(1065mm) MINIMUM	48in.(1220mm) MINIMUM

★Concrete, brick or tile walls shall be considered as grounded.

Qualified Person

A Qualified Person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Only qualified persons may work on electric circuit parts or equipment that have not been de-energized.

Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations Standards - 29 CFR 1926.32(m) and 1910.333, or applicable national, state or local regulations for additional information.

SAFETY

Overhead Power Lines

Assembling, towing or transporting irrigation machine components such as but not limited to the pivot point, linear cart, span/drive unit assemblies, overhangs and/or corner assemblies underneath or near power lines is extremely dangerous because of the risk of electrocution.

Operating equipment that elevates irrigation machine components, such as but not limited to an aerial lift or crane, near power lines is extremely dangerous because of the risk of electrocution. Only qualified personnel should operate this type of equipment. Before operating the equipment, qualified personnel must read the equipment manufacturers' operating and safety instructions.

Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations (Standards - 29 CFR) Cranes and derricks. - 1926.550, or any other applicable national, state or local regulations for additional information.

- Always presume that any overhead power line is an energized line unless and until the person(s) owning the line and/or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.
- Before operating any equipment near any power line make sure the line has been de-energized and visibly grounded at the point of work.
- Electrocution can occur without touching an electrical power line. Electricity, depending on the magnitude, can jump or become induced into equipment or conductive materials that come in close proximity to, but do not touch a power line. High wind, lightning, wet ground and other environmental conditions will increase the possibility of electrocution and require additional consideration.
- Transmitter towers can induce the equipment or materials being handled with an electrical charge. Before working or operating equipment near transmitter towers, make sure the transmitter is de-energized.
- Select the location where the span/drive unit will be assembled to ensure that neither the irrigation machine, or the equipment used during the assembly process, will violate the minimum clearance guidelines.
- Never operate equipment or allow the load, ropes or tag lines within 10 ft (3.05 m) of any power line rated 50 kV or lower whether it is energized or not. For lines rated over 50 kV, the minimum clearance shall be 10 ft (3.05 m) plus 0.4 inch (1.1 cm) for each kV over 50 kVs.
- Never assemble, tow, transport or allow irrigation machine components underneath or within 10 ft (3.05 m) of any power line rated 50 kV or lower whether it is energized or not. For lines rated over 50 kV, the minimum clearance shall be 10 ft (3.05 m) plus 0.4 inch (1.1 cm) for each kV over 50 kVs. Overhang support angles, cables and spinner drive components regularly extend 10 ft to 12 ft (3.1 m to 3.7 m) above the irrigation pipeline (span).
- Use barricades to identify areas where interference with overhead power lines could occur. Keep the assembly, towing or transporting of irrigation machine components and the operation of equipment including load, ropes or tag lines away from any power line, in the distances described above, whether the line is energized or not.
- Always designate a person to observe clearance between the power line and all equipment being operated or moved in order to give timely warning for all operations to STOP if the minimum clearance is violated.

Minimal Lockout / Tagout Procedure

The following procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It is used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before personnel perform any servicing or maintenance where the unexpectedly energized or start-up of the machine or equipment or release of stored energy could cause injury. All personnel, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

When the energy isolating devices are not lockable, tagout should be used and affected personnel must wear full personal protection.

Refer to U.S. Occupational Safety & Health Administration (OSHA) Regulations (Standards - 29 CFR) Typical minimal lockout procedures - 1910.147 App A, or applicable national, state or local regulations, for additional information.

Sequence Of Lockout

1. Notify all affected personnel that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
2. The authorized personnel shall identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress the stop button, open switch, close valve, etc.).
4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
5. Lock out the energy isolating device(s) with assigned individual lock(s).
6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating fly-wheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. CAUTION: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.
8. The machine or equipment is now locked out.

DANGER

•WHEN PERSONNEL WILL BE EXPOSED TO CIRCUIT ELEMENTS AND ELECTRICAL PARTS, A QUALIFIED PERSON MUST USE TEST EQUIPMENT TO VERIFY THAT THE CIRCUIT ELEMENTS AND EQUIPMENT PARTS OF THE EQUIPMENT ARE DE-ENERGIZED.

Restoring Equipment To Service

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken:

1. Check the machine or equipment and the immediate area around the machine to ensure that non-essential items are removed and that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all personnel are safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout devices and re-energize the machine or equipment.
5. Notify affected personnel that the servicing or maintenance is completed and the machine or equipment is ready to be used.

SAFETY

INSTALLATION INSTRUCTIONS

⚠ DANGER

- THE CONTROL PANEL CONTAINS HIGH VOLTAGE! 480 VOLTS CAN KILL.
- ALWAYS DISCONNECT ELECTRICAL POWER BEFORE SERVICING OR PERFORMING MAINTENANCE TO THE MACHINE.
- INSTALLATION OF THIS KIT, INCLUDING TESTING AND TROUBLESHOOTING, SHOULD BE PERFORMED ONLY BY AN AUTHORIZED VALLEY DEALER.
- ALWAYS REPLACE ANY GUARDS OR SHIELDS THAT ARE REMOVED FOR PERFORMING MAINTENANCE.

ACTIVATE DEVICE

1. Activate the device before installation.

NOTE

- Activate the device before installation to reduce the possibility of activation related problems during and after installation.
- The device must be activated and then power cycled before the device will appear on the customer's Tracker Comm Center account.
- To fully test any TrackerSP during installation, activation is required.

DISCONNECT ALL POWER

Follow the MINIMAL LOCKOUT/TAGOUT PROCEDURE located in the SAFETY section of this manual and do the following:

2. SHUT OFF and LOCK the public power service disconnect to the irrigation machine. FILL OUT the blue (OSHA safety color code) tag and attach to the disconnect after locking. See figure 11-1.
3. SHUT OFF the control panel main power disconnect and open the control panel inner door. See figure 11-2.

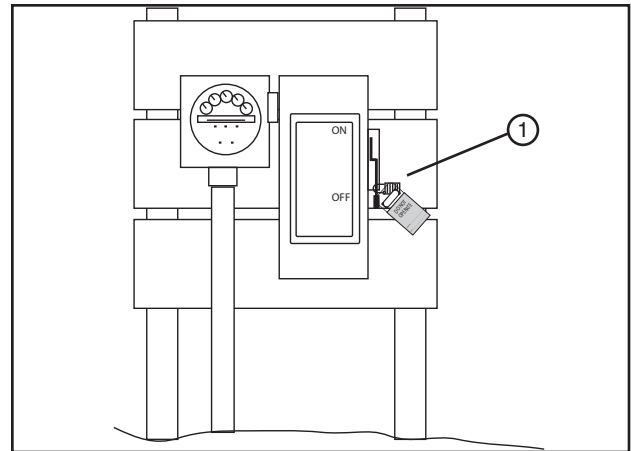


Figure 11-1 1. Service Disconnect

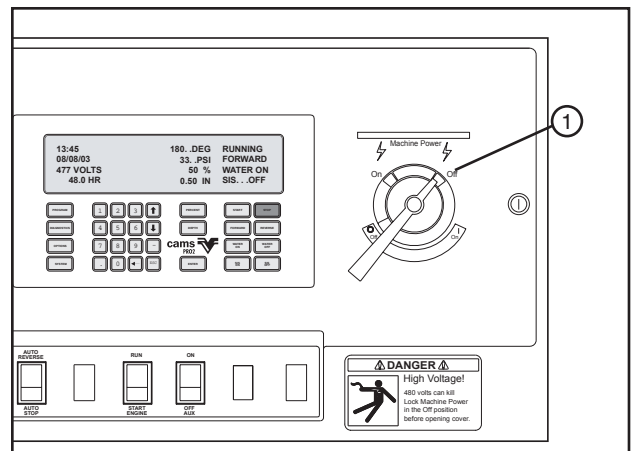


Figure 11-2 1. Main Power Disconnect

INSTALLATION INSTRUCTIONS

INSTALL TRACKERSP

- Align the 3 holes in the TrackerSP assembly mounting panel with 3 holes in top of control panel inner door. See figure 12-1.

If the existing flat cable clamp interferes with the TrackerSP assembly mounting panel, remove the existing flat cable clamp.

NOTE

In older control panels some of the mounting holes on the inner door for attaching the mounting panel may not exist.

In this case align the mounting plate with the one existing hole in top of inner door.

Use the mounting plate as a template to mark two new hole locations. Then drill two 3/16" (4.75 mm) holes.

- Attach mounting plate to inner door with either three #8-32 screws, lock washers and nuts or three #8-32 screws and hex nuts with external tooth lock washer†. See figure 12-1.

INSTALL CABLE CLAMP

- If the existing flat cable clamp was removed, install the new flat cable clamp (from kit) below the mounting panel. See figure 12-2.

INSTALL CORD CONNECTOR

- Remove one 1/2" knockout from bottom of control panel and install cord connector. See figure 12-3.

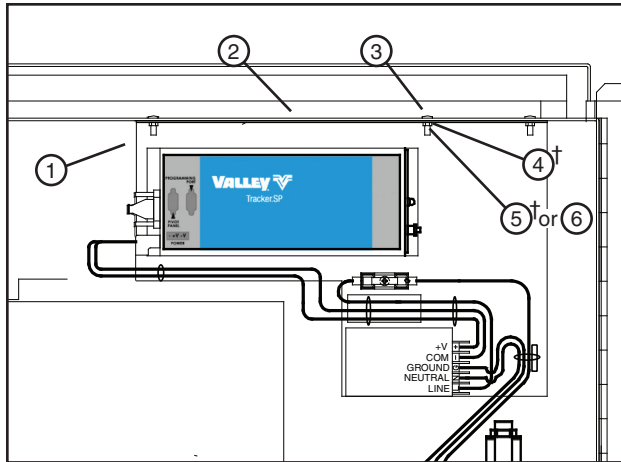


Figure 12-1 1. Mounting Panel 2. Inner Door 3. Screw 4. Lock washer 5. Nut 6. Nut W/ Ext. Th Lock Washer

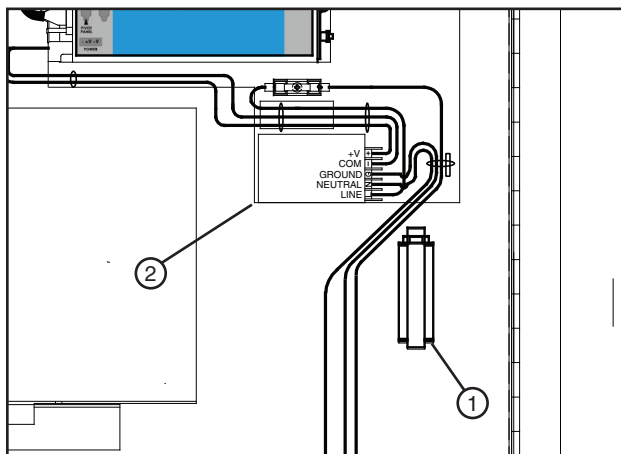


Figure 12-2 1. New Flat Cable Clamp 2. Mounting Panel

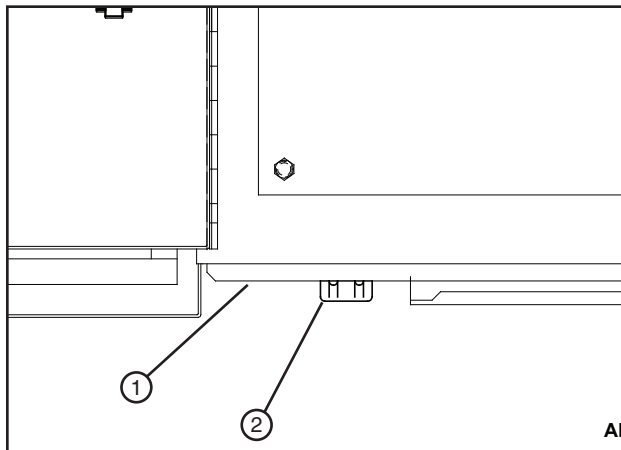


Figure 12-3 1. Bottom of Control Panel 2. Cord Connector

† Kit May Included Nut and Lock Washer or Nut With External Tooth Lock Washer.

INSTALLATION INSTRUCTIONS

INSTALL MAGNETIC MOUNT ANTENNA (CDMA, GPRS MODEMS ONLY)

8. Mount magnetic antenna on top of control panel. See figure 13-1.
9. Route antenna cable up through cord connector in bottom of control panel. See figure 13-2.
10. Connect antenna cable to antenna port on TrackerSP. See figure 13-2.
11. Open flat cable clamp, route all wires and cables through the flat cable clamp then close cable clamp. See figure 13-2.
12. Use wire ties to secure wiring and antenna cable as required.
13. Continue with Install Serial Cable on the next page.

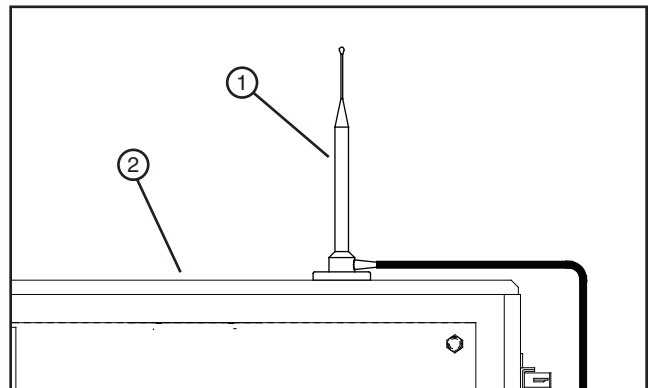


Figure 13-1

1. Antenna
2. Top of Control Panel

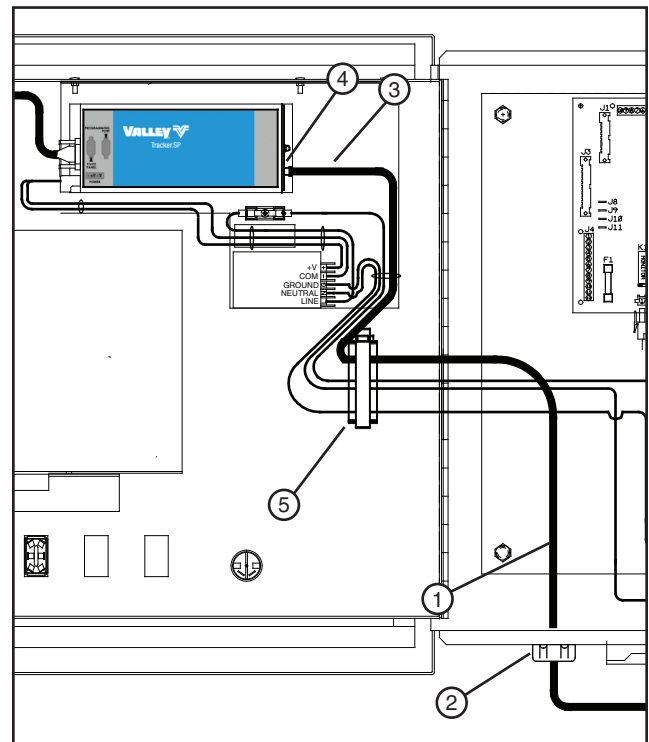


Figure 13-2

1. Antenna Cable
2. Cord Connector
3. Antenna Cable
4. Antenna Port
5. Flat Cable Clamp

INSTALLATION INSTRUCTIONS

INSTALL SERIAL CABLE

14. Connect the ground wire end of serial cable to 9-pin port on control module. Tighten serial cable screws completely.

See figure 14-1 (PRO2 or PRO module)
OR

See figure 14-2 (Select or Select2 module)

15. Connect the other end of serial cable to 9-pin pivot panel port on TrackerSP. Tighten serial cable screws completely.

See figure 14-1 (PRO2 or PRO module)
OR

See figure 14-2 (Select or Select2 module)

16. Attach ground wire from 9-pin cable to control module mounting screw.

See figure 14-1 (PRO2 or PRO module)
OR

See figure 14-2 (Select or Select2 module)

17. Remove the protective paper from wire tie holder and apply to inside of inner door near serial cable. Use wire tie to secure serial cable to wire tie holder.

See figure 14-1 (PRO2 or PRO module)
OR

See figure 14-2 (Select or Select2 module))

WIRE TRACKERSP TO CONTROL PANEL

18. Use the appropriate Field Install and Wiring Diagram from the Field Install and Wiring Diagram Section to wire the TrackerSP to the control panel.

19. After wiring is complete, proceed to the PROGRAMMING CONTROL PANEL section of this manual.

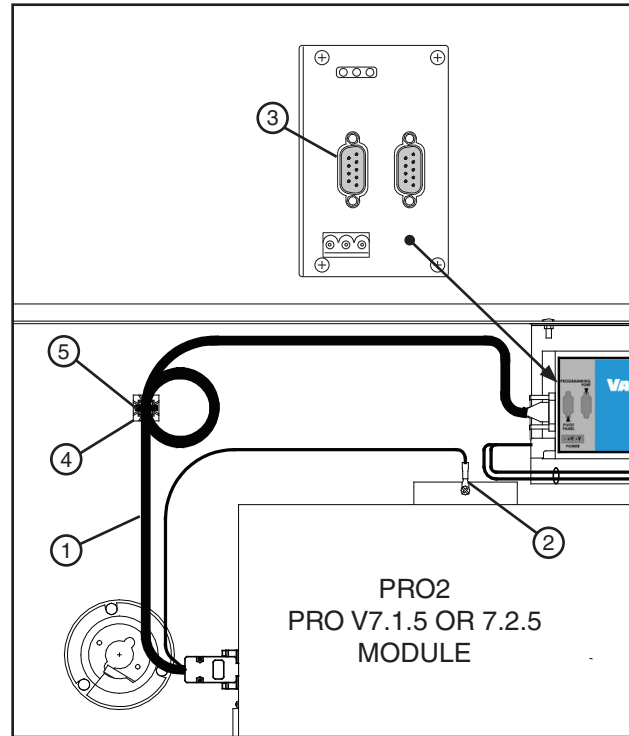


Figure 14-1

1. Serial cable
2. Ground Wire
3. 9-Pin Pivot Panel Port
4. Wire Tie Holder
5. Wire Tie

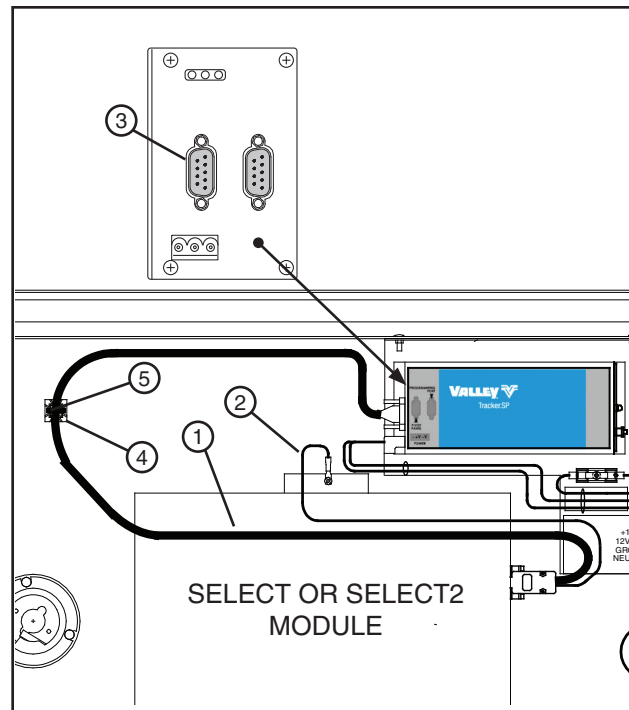


Figure 14-2

1. Serial cable
2. Ground Wire
3. 9-Pin Pivot Panel Port
4. Wire Tie Holder
5. Wire Tie

FIELD INSTALL AND WIRING DIAGRAMS

CONTENTS

FIELD INSTALL TRACKERSP DIGITAL CDMA OR GPRS MODEM PN 9311503	16
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PROGRAMMING CONTROL PANEL

The TrackerSP can be used with either the PRO2, PRO version 7.1.5 and 7.2.5, Select (with serial port) or Select2 control panels. The programming instructions for each control panel can be found on the following pages.

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PROGRAMMING CONTROL PANEL

PRO2 CONTROL PANELS VERSION 8.40 AND LATER SET RTU ID, BAUD RATE AND 9-PIN PROTOCOL

Turn power ON to control panel. After the control module powers up, press the following buttons on the Pro2 control module in the order listed below to set the RTU ID, baud rate and 9-pin protocol.

SYSTEM At the main screen press SYSTEM to display the system menu

```
06:09:13          1. .DEG STOPPED
02/12/04          0. .PSI FORWARD
480 VOLTS        72 % WATER. ON
33.3 HR          0.35 IN SIS... 52
```

1 Press 1 to display the CONSTANTS menu

```
0 EXIT          3 RESET          6 TRANSMIT
1 CONSTANTS    4 REVIEW         7 LANGUAGE
2 DATA         5 CYCLE          8 HOURS
PRESS NUMBER >
```

8 Press 8 to display OTHER constants

```
0 EXIT          3 SIS           6 PRES DLY
1 TIME         4 END-GUN      7 LOW PRES
2 DATE         5 POSITION     8 OTHER
PRESS NUMBER >
```

6 Press 6 to display the RTU ID field at the bottom of screen

```
0 EXIT          3 VOLTAGE       6 RTU ID
1 MIN APP      4 WIDE BND     7 DAILY OPS
2 HRS/REV      5 FLOWMETER    8 OTHER
RTU ID (0) >
```

NOTE

When an RTU ID number of less than 100 is used, the zeros in front of the number will not show on the screen after entry.

0 Enter the new RTU ID of 000

```
0 EXIT          3 VOLTAGE       6 RTU ID
1 MIN APP      4 WIDE BND     7 DAILY OPS
2 HRS/REV      5 FLOWMETER    8 OTHER
RTU ID (0) > 000
```

0

0

ENTER Press enter to save the RTU ID

8 Press 8 to display OTHER constants

```
0 EXIT          3 VOLTAGE       6 RTU ID
1 MIN APP      4 WIDE BND     7 DAILY OPS
2 HRS/REV      5 FLOWMETER    8 OTHER
PRESS NUMBER >
```

7 Press 7 to display the COM PORT menu

```
0 EXIT          3 PERCENT TIMER 6 ENGINE/PUMP
1 WIND         4 LOW VOLTAGE   7 COM PORT
2 AR/AS       5 DIR OFFSET   8 OTHER
PRESS NUMBER >
```

1 Press 1 to display 9-PIN COM PORT menu

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

CONTINUED ➡

PROGRAMMING CONTROL PANEL

PRO2 CONTROL PANELS VERSION 8.40 AND LATER SET RTU ID, BAUD RATE AND 9-PIN PROTOCOL (CONTINUED)

2 Press 2 to display BAUD menu

```
0 EXIT
1 PROTOCOL
2 BAUD RATE
PRESS NUMBER >
```

5 Press 5 to set the baud rate to 9600

```
0 EXIT  1 300    4 4800   7 38400
        2 1200   5 9600   8 57600
        3 2400   6 19200  9 115200
SELECT BAUD RATE (9600) >
```

1 Press 1 to display the PROTOCOL menu

```
0 EXIT
1 PROTOCOL
2 BAUD RATE
PRESS NUMBER >
```

1 Press 1 to set the 9-PIN PROTOCOL to REMOTE CONTROL

```
0 EXIT          3 PLC          6 GPS v1
1 REMOTE CONTROL 4 NA
2 SERVICE TOOL  5 REMOTE CTL v2
SELECT PROTOCOL (1) >
```

NOTE

- A protocol can be used by either com port but, it cannot be used by both com ports at the same time.
- If REMOTE CONTROL cannot be selected, it may be in use by the 25-PIN COM PORT. Set the 25-PIN COM PORT to a protocol other than REMOTE CONTROL.

SYSTEM Press SYSTEM - to display the main screen

```
06:09:13          1. .DEG STOPPED
02/12/04          0. .PSI FORWARD
480 VOLTS        72 % WATER. ON
33.3 HR          0.35 IN SIS... 52
```

Programming complete, proceed to SETUP AND TESTING section.

PROGRAMMING CONTROL PANEL

PRO2 CONTROL PANELS VERSION 8.03 AND PRIOR SET RTU ID, BAUD RATE AND 9-PIN PROTOCOL

Turn power ON to control panel. After the control module powers up, press the following buttons on the Pro2 control module in the order listed below to set the RTU ID, baud rate and 9-pin protocol.

SYSTEM At the main screen press SYSTEM to display the system menu

```
06:09:13      1. .DEG STOPPED
02/12/04      0. .PSI FORWARD
480 VOLTS    72 % WATER ON
33.3 HR      0.35 IN SIS... 52
```

1 Press 1 to display the CONSTANTS menu

```
0 EXIT      3 RESET      6 TRANSMIT
1 CONSTANTS 4 REVIEW     7 LANGUAGE
2 DATA     5 CYCLE     8 HOURS
PRESS NUMBER >
```

8 Press 8 to display OTHER constants

```
0 EXIT      3 SIS      6 PRES DLY
1 TIME     4 END-GUN  7 LOW PRES
2 DATE     5 POSITION 8 OTHER
PRESS NUMBER >
```

6 Press 6 to display the RTU ID field at the bottom of screen

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
RTU ID (000) >
```

0 Enter the new RTU ID of 000

0

0

ENTER Press enter to save the RTU ID

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
RTU ID (000) > 000
```

8 Press 8 to display OTHER constants

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
PRESS NUMBER >
```

7 Press 7 to display the BAUD menu

```
0 EXIT      3 PERCENT TIMER 6 ENGINE/PUMP
1 WIND      4 LOW VOLTAGE  7 BAUD
2 AR/AS     5 DIR OFFSET  8 OTHER
PRESS NUMBER >
```

1 Press 1 to display 9-PIN COM PORT menu

```
0 EXIT
1 9-PIN COM PORT  3 9-PIN PROTOCOL
2 25-PIN COM PORT 4 25-PIN PROTOCOL
PRESS NUMBER >
```

3 Press 3 to set the baud rate to 9600

```
0 EXIT      3 9600      6 38400
1 300      4 14400   7 57600
2 1200     5 19200   8 115200
SELECT BAUD RATE ( 9600) >
```

3 Press 3 to display the 9-PIN PROTOCOL menu

```
0 EXIT
1 9-PIN COM PORT      3 9-PIN PROTOCOL
2 25-PIN COM PORT    4 25 PIN PROTOCOL
PRESS NUMBER >
```

1 Press 1 to set the 9-pin protocol to BASE STATION

```
0 EXIT      3 SOIL MOISTURE
1 BASE STATION
2 SERVICE TOOL
SELECT PROTOCOL >
```

SYSTEM Press SYSTEM - to display the main screen

```
06:09:13      1. .DEG STOPPED
02/12/04      0. .PSI FORWARD
480 VOLTS    72 % WATER ON
33.3 HR      0.35 IN SIS... 52
```

Programming complete, proceed to SETUP AND TESTING section.

PROGRAMMING CONTROL PANEL

PRO CONTROL PANELS VERSION 7.1.5 AND 7.2.5 SET RTU ID AND BAUD RATE

Turn power ON to the control panel. After the control module powers up, press the following buttons on the Pro V7 control module in the order listed below to set the RTU ID and baud rate.

SYSTEM At the main screen press **SYSTEM** to display the system menu

```
06:09:13      1. .DEG STOPPED
02/12/04      0. .PSI FORWARD
480 VOLTS    72 % WATER. ON
33.3 HR      0.35 IN SIS... 52
```

1 Press 1 to display the CONSTANTS menu

```
0 EXIT      3 RESET      6 TRANSMIT
1 CONSTANTS 4 REVIEW     7 LANGUAGE
2 DATA     5 CYCLE     8 HOURS
PRESS NUMBER >
```

8 Press 8 to display OTHER constants

```
0 EXIT      3 SIS      6 PRES DLY
1 TIME     4 END-GUN  7 LOW PRES
2 DATE     5 POSITION  8 OTHER
PRESS NUMBER >
```

6 Press 6 to display the RTU ID field at the bottom of screen

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
RTU ID (000) >
```

0 Enter the new RTU ID of 000

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
RTU ID (000) > 000
```

0

0

ENTER Press enter to save the RTU ID

8 Press 8 to display OTHER constants

```
0 EXIT      3 VOLTAGE   6 RTU ID
1 MIN APP   4 WIDE BND  7 DAILY OPS
2 HRS/REV   5 FLOWMETER 8 OTHER
PRESS NUMBER >
```

7 Press 7 to display the BAUD menu

```
0 EXIT      3 PERCENT TIMER 6 ENGINE/PUMP
1 WIND     4 LOW VOLTAGE  7 BAUD
2 AR/AS    5 DIR OFFSET  8 MODEL
PRESS NUMBER >
```

1 Press 1 to display 9-PIN COM PORT menu

```
0 EXIT
1 9-PIN COM PORT
2 25-PIN COM PORT
PRESS NUMBER >
```

3 Press 3 to set the baud rate to 9600

```
0 EXIT      3 9600
1 300      4 19200
2 1200
SELECT BAUD RATE ( 9600) >
```

SYSTEM Press **SYSTEM** - to display the main screen

```
06:09:13      1. .DEG STOPPED
02/12/04      0. .PSI FORWARD
480 VOLTS    72 % WATER. ON
33.3 HR      0.35 IN SIS... 52
```

Programming complete, proceed to SETUP AND TESTING section.

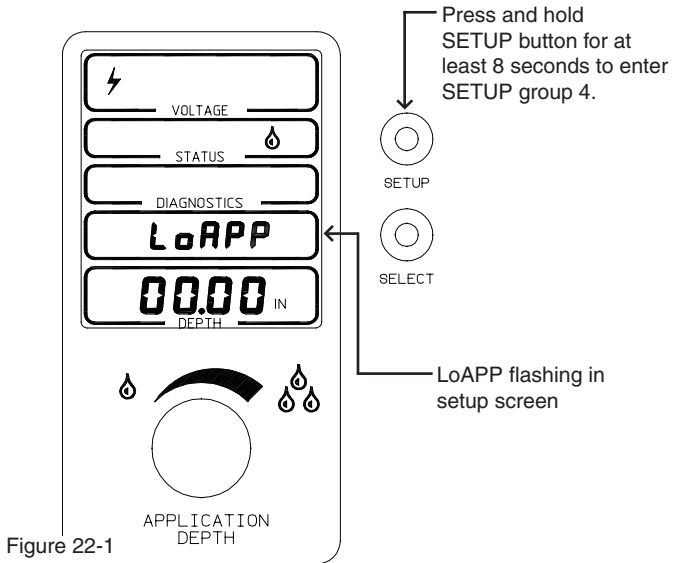
PROGRAMMING CONTROL PANEL

SELECT CONTROL PANELS SET BAUD AND RTU ID

Turn power On to the control panel. After the control module powers up, perform the steps listed below to set the RTU ID and baud rate on a Select control module.

1. Press and hold the SETUP button for approximately 8 seconds, the first 3 setup screens will flash in the information display screen.

When LoAPP appears in the information display screen, release the setup button to access setup group 4. See figure 22-1.

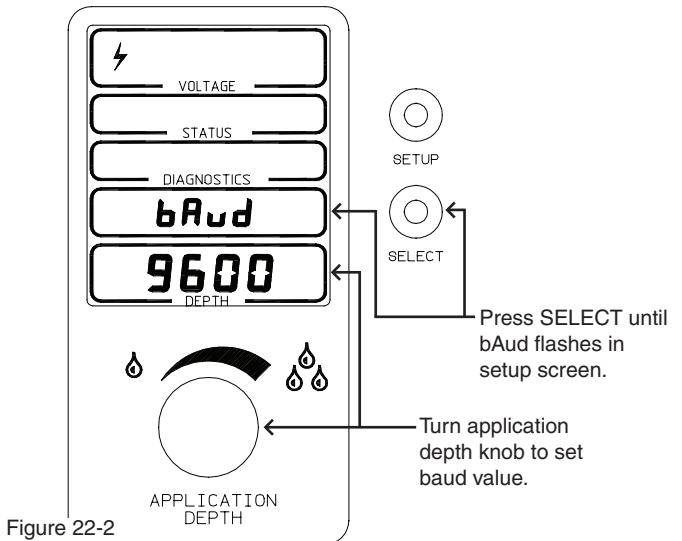


2. Press and release the SELECT button to advance through the values until "bAud" is seen in the information display screen. See figure 22-2.

3. Turn the application depth knob to adjust the baud value to 9600. See figure 22-2.

4. Press and release the SELECT button again until PASS is seen in the information display screen. PASS is the RTU ID. See figure 22-3.

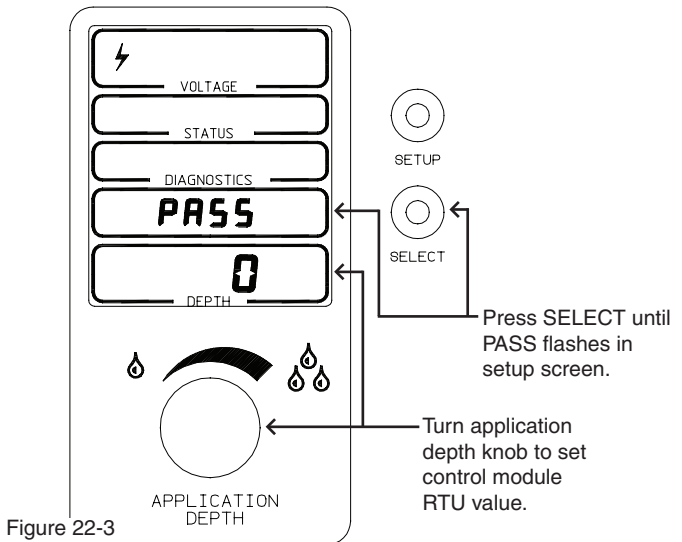
5. Turn the application depth knob to set the control module RTU ID to 0. See figure 22-3.



NOTE
When choosing a number less than 100, the zeros in front of the number will not show on the screen before or after entry.

6. Press and release SETUP to save the changes and return to normal operating mode.

Programming complete, proceed to SETUP AND TESTING section.



PROGRAMMING CONTROL PANEL

SELECT2 CONTROL PANELS SET BAUD, PROTOCOL AND RTU ID

Turn power On to the control panel. After the control module powers up, perform the steps listed below to set the baud rate and RTU ID on a Select2 control module.

1. Press the SETUP button 5 times to access setup group 5, GROUP 5 should appear in the voltage display. See figure 23-1.

COM.PORT should be flashing in the information display. See figure 23-1.

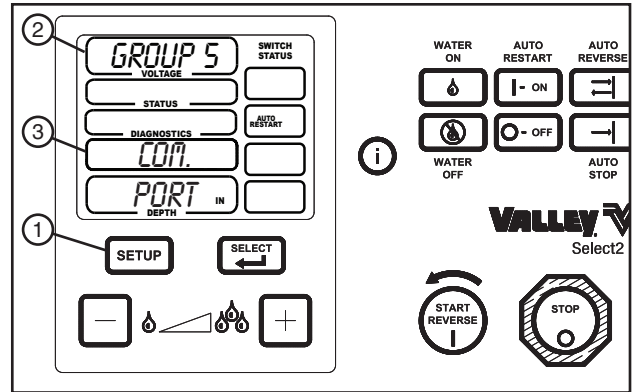


Figure 23-1
1. Setup Button
2. Voltage Display
3. Information Display

2. Press the SELECT button 1 time to access the baud rate setup, BAUD should appear in the voltage display. See figure 23-2.

9-PIN should be blinking in the information display. See figure 23-2.

3. Use the application depth buttons to adjust the baud value to 9600. See figure 23-2.

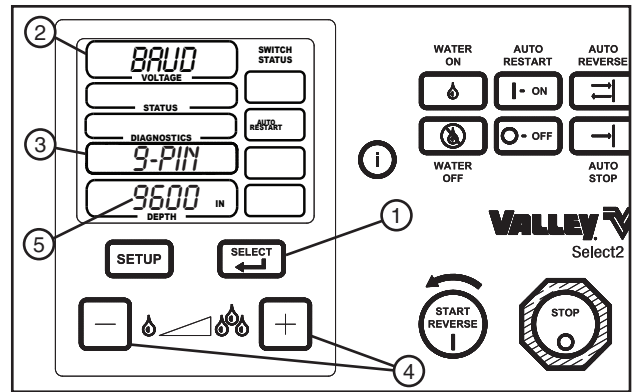


Figure 23-2
1. Select Button
2. Voltage Display
3. Information Display Screen
4. Application Depth Button
5. Baud Value

4. Press the SELECT button 1 time to access the protocol setup, PROTOCOL should appear in the voltage display. See figure 23-2.

9-PIN should be blinking in the information display. See figure 23-2.

5. Use the application depth buttons to set the 9-pin protocol value to REM CTL. See figure 23-2.

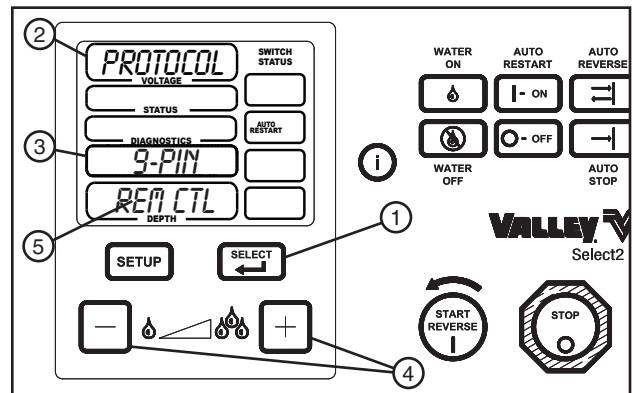


Figure 23-2
1. Select Button
2. Voltage Display
3. Information Display Screen
4. Application Depth Button
5. 9-Pin Protocol Value

NOTE

- A protocol can be used by either com port but, it cannot be used by both com ports at the same time.
- If REMOTE CONTROL cannot be selected, it may be in use by the 25-PIN COM PORT. Set the 25-PIN COM PORT to a protocol other than REMOTE CONTROL.

CONTINUED ➔

PROGRAMMING CONTROL PANEL

SELECT2 CONTROL PANELS SET BAUD, PROTOCOL AND RTU ID (continued)

- Press the SELECT button 3 times to access the RTU ID setup, RTU ID should be blinking in the information display screen. See figure 24-3.
- Use the application depth buttons to set the control module RTU ID value to 0. See figure 24-3.

NOTE

When choosing a number less than 100, the zeros in front of the number will not show on the screen before or after entry.

- Press the information button to save the changes and return to normal operating mode. See figure 24-3.

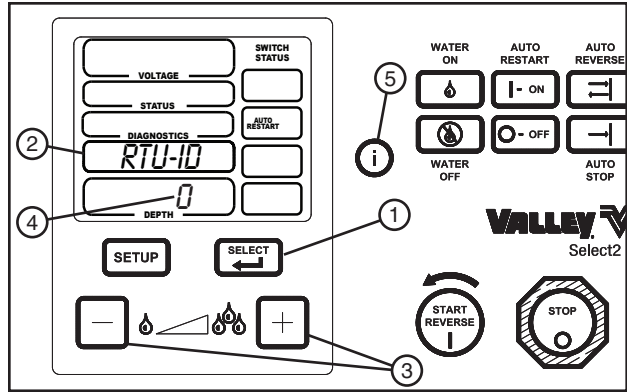


Figure 24-3

- Select Button
- Information Display Screen
- Application Depth Button
- RTU ID Value
- Information Button

Programming complete, proceed to SETUP AND TESTING section.

SETUP AND TESTING

SETUP COMPUTER/HYPERTERMINAL

Use these instructions to setup computer/hyperterminal whenever local testing of communications, local programming of the TrackerSP or local testing of TrackerSP operation will be used.

⚠ DANGER

- THE CONTROL PANEL CONTAINS HIGH VOLTAGE! 480 VOLTS CAN KILL.
- INSTALLATION OF THIS KIT, INCLUDING TESTING AND TROUBLESHOOTING SHOULD BE PERFORMED ONLY BY AN AUTHORIZED VALLEY DEALER.

1. Turn ON the computer, control panel and TrackerSP.
2. Start the HyperTerminal program hypertrm.exe.

Click START, ALL PROGRAMS, ACCESSORIES, COMMUNICATIONS, HYPERTERMINAL.

NOTE

- In some versions of Windows, the HyperTerminal program is located in Accessories instead of communications.
- The HyperTerminal program may not be included in all versions of Windows, but can be installed separately.

3. At the Connection Description screen, enter a name for the connection and choose an ICON. Then click OK. See figure 25-1.
4. At the Connect To screen, click the selection arrow on the “Connect using” list box and select the COM port that the Tracker 2 will be connected to. In this example COM2 was selected. See figure 25-2.

When you select the COM port, the phone number to dial boxes are grayed. Then click OK. See figure 25-2.

NOTE

Typically COM port choices will be COM1 or COM2. However, if an adapter is used the COM port number may be COM3 or higher.

5. At the Com Port Properties screen, change the port settings to the following parameters. See figure 25-3.

BITS PER SECOND	9600
DATA BITS	8
PARITY	NONE
STOP BITS	1
FLOW CONTROL	None

6. When done, click apply, then click OK.

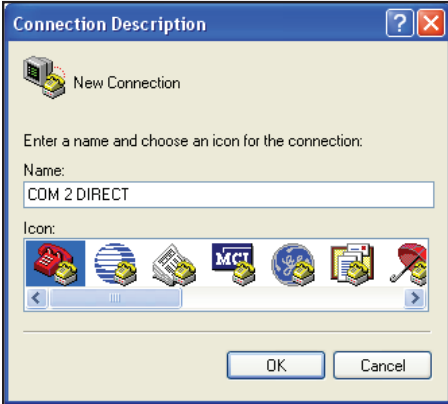


Figure 25-1 Connection Description Screen



Figure 25-2 Connect To Screen

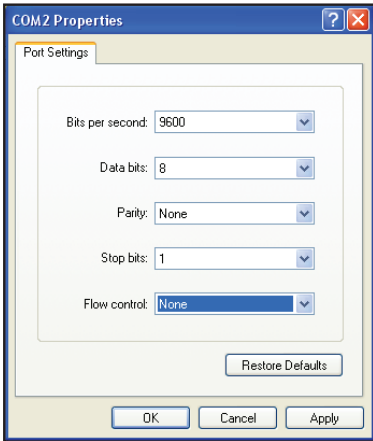


Figure 25-3 COM Port Properties Screen

SETUP AND TESTING

SETUP COMPUTER/HYPERTERMINAL (CONTINUED) CONNECT TO TRACKERS

7. Verify that the TrackerSP is ON, the LED on the TrackerSP should be green and blinking. See figure 26-2

NOTE

For additional information on LED light indications see LED INDICATOR TABLE in the TROUBLESHOOTING section.

8. Connect computer COM port to TrackerSP programming port with DB9 serial cable. HyperTerminal setup is complete.

Continue with TESTING COMMUNICATIONS on the next page.

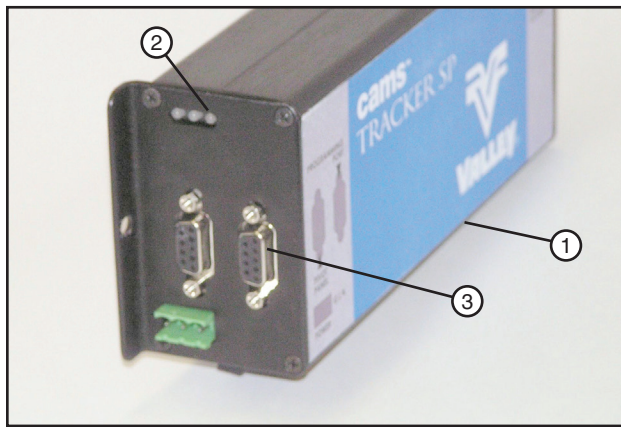


Figure 26-2 1. TrackerSP 2. LED 3. Programming Port

SETUP AND TESTING

TESTING COMMUNICATIONS

Communications testing of the TrackerSP is recommended, choose the desired method of testing from the choices listed below:

- LOCAL TESTING: Use a Computer with HyperTerminal program to test this TrackerSP for signal strength and cellular communications. Proceed to LOCAL TESTING instructions below.
- REMOTE TESTING: Make sure TrackerSP is ON and remote control switch is ON, use a Computer connected to the Internet and log on to the User's TrackNET Website Account, select this ACTIVATED TrackerSP from the Device List to open the Status Summary screen, open the Commands screen, request a Status Report, go back to the Status Summary screen, open the Device History screen and view the signal strength in the most recent event history record.

NOTE
The TrackerSP MUST be activated in order to perform signal, communications and telephone testing.

LOCAL TESTING METHOD

To test communications locally, do the following:

- With Control Panel and TrackerSP Off, connect computer, with HyperTerminal running, to TrackerSP programming port.
- Turn On the control panel and TrackerSP.

1. At the computer, press and release the enter key until "Checking Panel" is displayed. Connection to the control panel is tested, then the Main Menu is displayed. This may take several minutes. See figure 27-1.

SIGNAL STRENGTH TEST

2. At the Main Menu, press 4 to run a Signal Strength test. Depending on local conditions this test may take several minutes. See figure 27-1.

The signal strength test displays the signal strength in decibels and text. Compare the signal strength to the chart. See figure 27-1.

NOTE
To be acceptable, the signal strength must be in the good or excellent category.
Signal strength may be improved by moving magnetic mount antenna to a different position on the machine.

3. When done, press m to go back to the Main Menu or any other key to repeat the Signal Strength test.

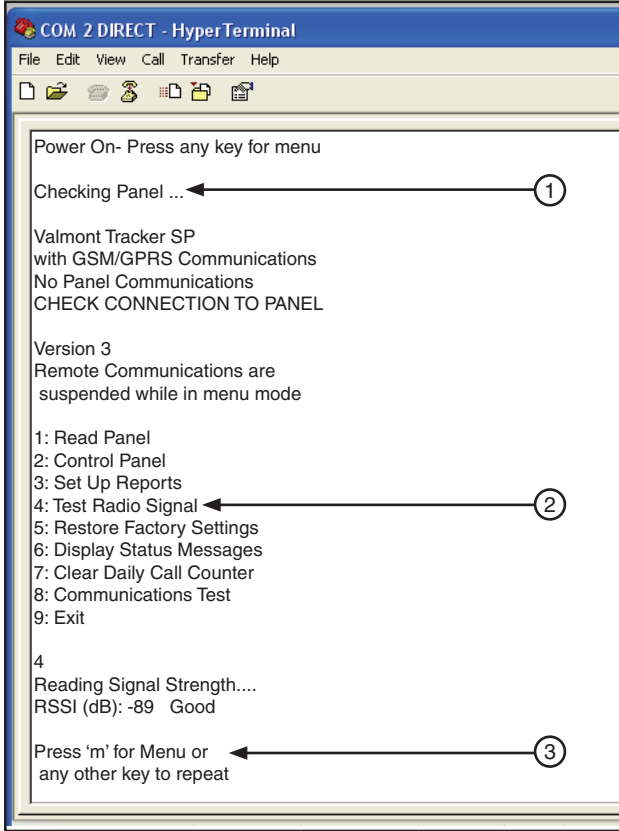


Figure 27-1

SIGNAL STRENGTH	
Decibel	Text
-113 dB to -103 dB	Inadequate
-102 dB to -95 dB	Weak
-94 dB to -83 dB	Good
> = -82 dB	Excellent

Figure 27-2

SETUP AND TESTING

TESTING COMMUNICATIONS (CONTINUED) LOCAL TESTING METHOD (CONTINUED) CELLULAR COMMUNICATIONS TEST

4. At the Main Menu, press 8 to run a Cellular Communications Test. See figure 28-1.

Use the communications test to verify the ability of the TrackerSP to transmit data to and receive data from the Tracker Communications Center.

- If the cellular communications test is successful, the following messages will be displayed:
Transmission Successful
Communications Test Passed
- If the cellular communications test is unsuccessful, one or more of the following messages will be displayed:
No Cell Service
Report Aborted
Response NOT Received
Test Failed

5. When done, press m to go back to the Main Menu or any other key to repeat the Communications test.

- If the TrackerSP passed both the signal strength and cellular communications tests, proceed to Limiting Calls Before Testing (Optional) on the next page or go to Testing Operation on page 36.
- If the TrackerSP did not pass either the signal strength or cellular communications test, contact the Tracker Support Center.

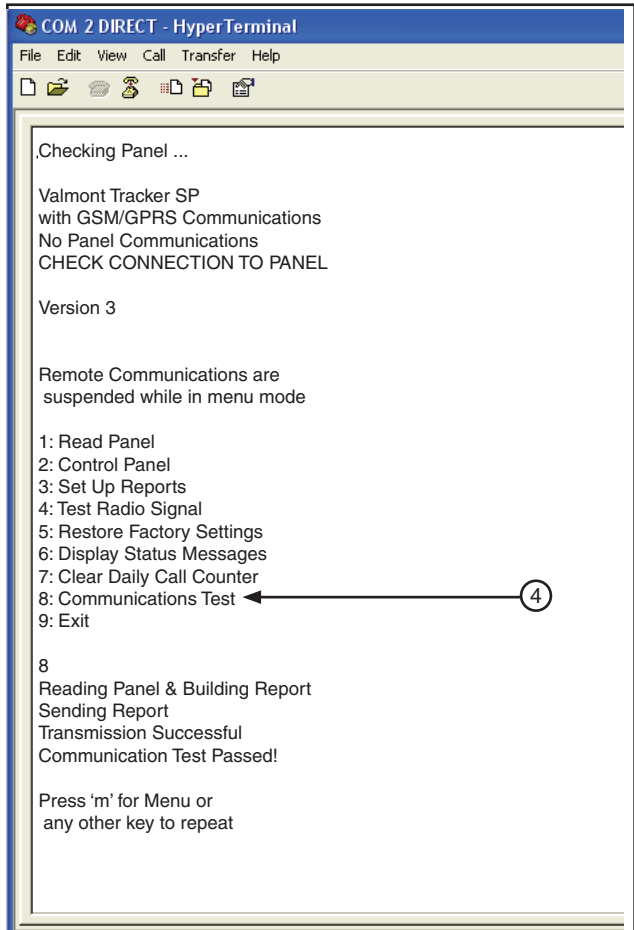


Figure 28-1

LIMITING CALLS BEFORE TESTING-OPTIONAL

Every time a command is sent from the TrackNET Website, the customer pays for two calls. The first call from the TrackNET Website sends a command to the TrackerSP. The second call from the TrackerSP sends a report back to the TrackNET Website.

If desired, the calls from the TrackerSP to the TrackNET Website can be limited to reduce the number of calls used during testing.

To prevent calls from the TrackerSP to the TrackNET Website, do the following.

- With Control Panel and TrackerSP Off, connect computer with HyperTerminal running to TrackerSP programming port.
- Turn On the control panel and TrackerSP.

1. At the computer, press and release the enter key until "Checking Panel" is displayed. Connection to the control panel is tested, then the Main Menu is displayed. This may take several minutes. See figure 29-1.
2. At the Main Menu, press 3 to display the Setup Reports Menu. See figure 29-1.
3. At Call Limit per day, , enter 1 to limit the calls to 1 status change call per day from the TrackerSP to the TrackNET Website. Then press Enter. See figure 29-1.
4. Press enter repeatedly until End of Local Programming appears on the computer screen. See figure 29-1.
5. To permanently save changes press "s" or to exit without saving press "esc". See figure 29-1.
6. After the confirmation message appears disconnect the serial cable from the TrackerSP programming port.

Reverse this process to reset the call timer/counter back to its default setting, to a desired number of calls or an unlimited number of calls.

NOTE

For additional information on setting the Call Limit Per Day see DAILY CALL LIMITS - SETTING TO ZERO or SETTING TO UNLIMITED in the TROUBLESHOOTING section.

Go to Testing Operation on the next page.

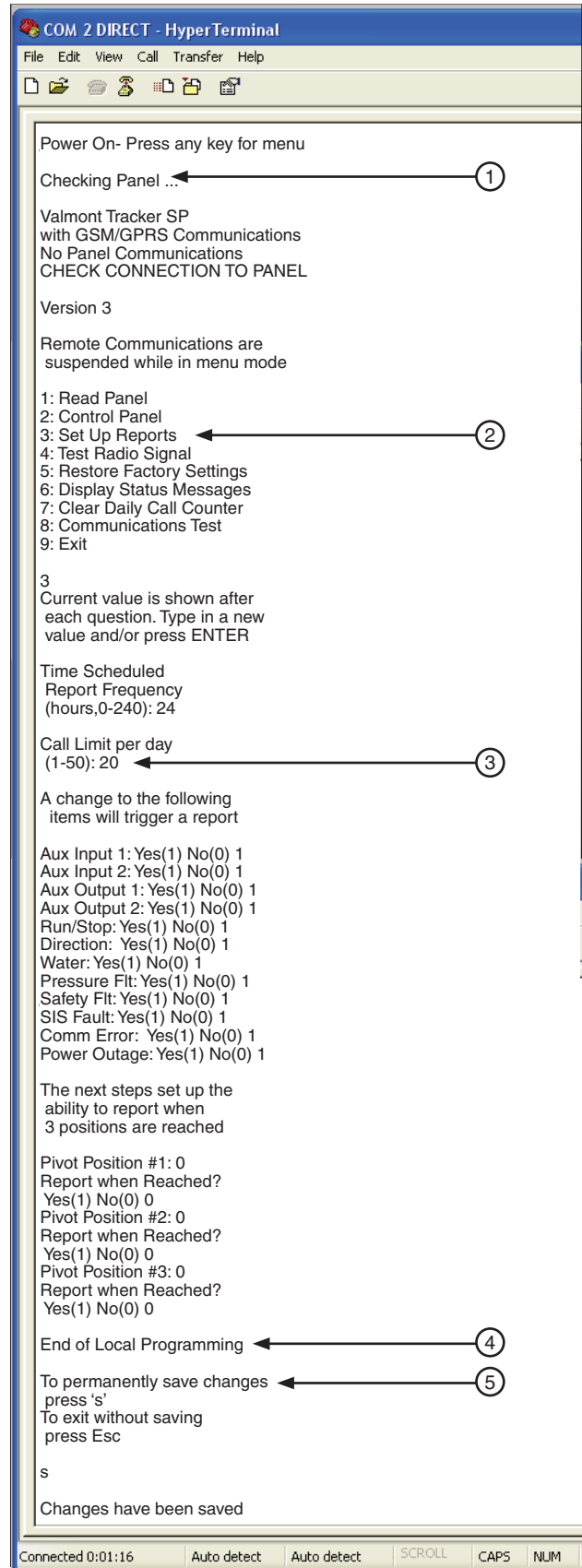


Figure 29-1

TESTING

TESTING OPERATION

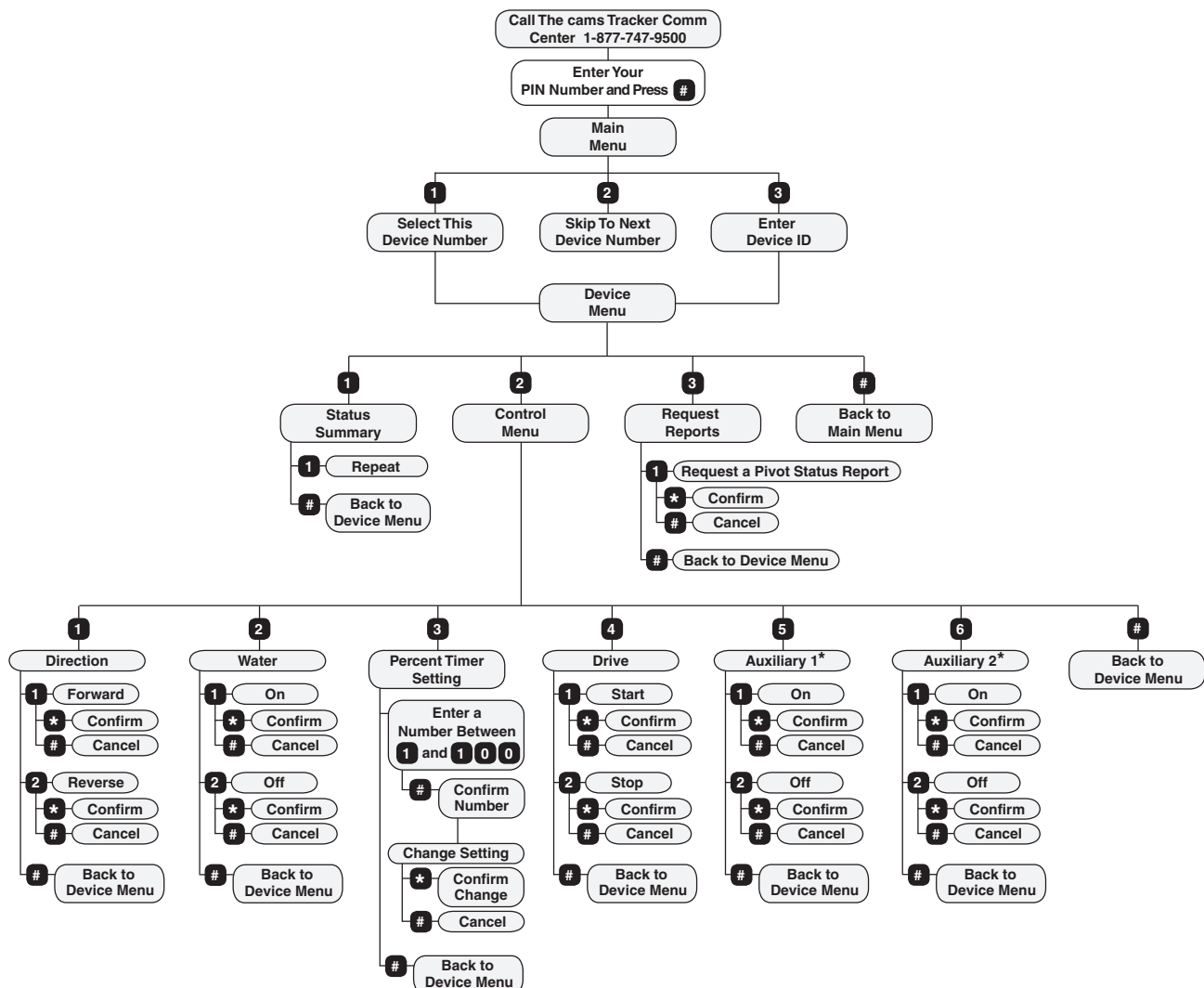
To test for proper operation, the TrackerSP must be activated for use with the TrackNET Website.

In addition the TrackerSP CDMA modem must be activated with Verizon. After the TrackerSP is activated, turn the power to the irrigation machine ON. Then either log onto or call the TrackNET Website.

- If testing by website (recommended for satellite modems outside the United States): Log on to the TrackNET Website and use the commands screen to send commands to the TrackerSP. Test all functions of the TrackerSP and the irrigation machine for proper operation.
- If testing by telephone: Call the TrackNET Website and use the applicable Quick Reference Telephone Menu from below or on the following page. Test all functions of the TrackerSP and the irrigation machine for proper operation.

After Testing with Telephone is complete, installation of the TrackerSP is also complete.

QUICK REFERENCE TELEPHONE MENUS TRACKERSP - DIGITAL CDMA OR GPRS MODEM



* Auxiliary control is not available when TrackerSP is used with the Select or Select2 Control Panel.

PRODUCT OVERVIEW

The TrackerSP is a web-to-wireless remote monitoring and Communication device that reports changes in equipment operation to the user and communicates user initiated control commands to the control panel through the TrackNET Website.

The TrackNET Website is the link between any Tracker device and the user. The user can contact the TrackNET Website 24 hours a day, seven days a week, by telephone or by Internet using the Tracker web site.

Cellular Service Required

- The unit will not attempt to transmit unless cellular service is available and the RSSI exceeds a value of -106 dB.
- The signal strength displayed in device history on the TrackNET Website will be less than 8 (-106 dB).
- The signal strength displayed on the TrackerSP Service Tool, will be less than 106 (-106 dB).

Battery Charger

- On-board voltage regulator that continually charges the cellular modem battery while DC power from the power supply is present.

Power Monitor

- AC power outages and low battery conditions during an AC power outage are reported to the TrackNET Website when the Report Low Power Mode is set to NO. This is the default setting.

CAUTION

DO NOT SET THE REPORT LOW POWER MODE TO YES. SETTING THE REPORT LOW POWER MODE TO YES TURNS THE TRACKERSP RADIO OFF WHEN AN AC POWER OUTAGE OCCURS. THIS PREVENTS COMMUNICATION FROM THE TRACKER COMMUNICATIONS CENTER TO THE TRACKERSP. COMMANDS OR REQUESTS SENT TO THE TRACKERSP WILL NOT BE RECEIVED.

RETRY PROCESS

If the device is unable to successfully call and transmit data to the TrackNET Website, the retry process will begin. The device will try to call and transmit data up to 10 times with a one to two minute delay between attempts. If the data cannot be transmitted to the TrackNET Website, the retry process ends. A successful call and transmission of data to the TrackNET Website will end the retry process.

DAILY CALL LIMITS

Each call between the TrackNET Website and the Tracker device is a billable call. Telephone calls between the user and the TrackNET Website are toll free.

A call is made from the TrackNET Website to the Tracker Device when the operator uses the telephone or website to do one of the following:

- Change an Event Notification between a Tracker device and the TrackNET Website.
- Request and confirm a Send Command.
- Request and confirm a Status Report.

A call is made from the Tracker Device to the TrackNET Website after each of the following events.

- A change in Event Notification is applied.
- A command is performed.
- A report request is fulfilled.
- A change in machine status occurs (event-based call).

TROUBLESHOOTING

DAILY CALL LIMITS (CONTINUED)

The number of event-based calls that a Tracker Device is allowed to make to the TrackNET Website is programmable. To reduce the number of event-based calls from the Tracker Device to the TrackNET Website that might result from over-active inputs or power cycling conditions, use the TrackNET Website, Device Setup, Event Notification screen to select which event based calls to allow or Setup Reports screen to select which event based transmissions to allow.

The daily call limit for calls from the Tracker Device to the TrackNET Website can be adjusted to allow up to 50 event based calls per day.

- To set the daily call limit use the TrackNET Website (Send Commands Screen) or a personal computer with hyperterminal (Setup Reports Screen).

If the daily call limit is reached, event-based calls from the Tracker device to the TrackNET Website are disabled and the red LED2 will blink on and off every 1 second until the call counter is reset to zero. However, time scheduled and user requested calls will continue to function normally, even after the daily call limit is reached.

SETTING TO ZERO

The daily call limit counter can be reset to zero either automatically after the daily 24 hour timer expires, manually by power cycling the device or at any time using the TrackNET Website, Send Commands Advanced Options or Other Tracker Options screen for the selected device.

SETTING TO UNLIMITED

The daily call limit counter can be set to unlimited using the TrackNET Website or Locally using a computer connected to the device.

- TrackNET Website (You must be logged in as an Administrator to make this change on the web site). To change the daily call limit to unlimited, select the device, then go to Device, Send Commands, Show Advanced Options. In the Other Tracker Options category click the Daily Transmission Limit check box, set the number of calls to unlimited and click Send Command.

OR

- Locally with computer connected to device. To change the daily call limit to unlimited, use HyperTerminal to access the device menu and navigate to Call Limit Per Day. Enter 227 and save changes. Exit the device menu and disconnect the computer from device.

SPECIFICATIONS

TRACKERSP	
OPERATING TEMPERATURE RANGE	-22° F to 140° F (-30° C to 60° C)
OPERATING HUMIDITY RANGE	5% to 95% non-condensing
ENCLOSURE	Extruded aluminium, for indoor application, size 6" x 3" x 2", must be installed in a waterproof and safe environment.
SUPPLY VOLTAGE	15 VDC from a 120 VAC power supply. (Digital CDMA and GPRS Modem)
ANTENNA	Magnetic Remote Mounted Antenna (Digital CDMA Modems)
CELLULAR MODEM	Digital GPRS or CDMA FCC approved
BATTERY BACKUP	12 VDC 0.8 Ah (Digital CDMA and GPRS Modem)
CPU	Microchip PIC 18F6720 product. Non-volatile (EEPROM)
MEMORY	FLASH memory is used to store configuration and operational data. The configuration data can be changed using a personal computer with hyperterminal.

TROUBLESHOOTING

TRANSMISSION OR RECEPTION PROBLEMS

The TrackerSP should operate anywhere there is cellular coverage. However, there are three categories of installation problems:

- Network connection problems.
- Inadequate signal strength.
- Too much signal strength.

NETWORK CONNECTION PROBLEMS

When signal strength is good but unit cannot complete a transmission to the TrackNET Website.

- This problem will occur when the cellular carrier has not contracted with the AERIS network.

INADEQUATE SIGNAL STRENGTH

If the unit is being installed in a very remote location, there may not be enough signal.

- The signal strength displayed in device history on the TrackNET Website will be less than 8 (-106 dB).
- The signal strength displayed on the personal computer with hyperterminal will be less than 106 (-106 dB).

If the signal is weak, change the magnetic antenna mounting location to improve signal strength.

TOO MUCH SIGNAL STRENGTH

If the unit is installed very close to a cell tower and/or environments with nearby metal structures there may be too much signal strength. The problem occurs when the unit's transmission echoes off of the nearby metal and effectively sends many simultaneous messages (echoes) to the cell tower and the cell tower rejects the call.

- To correct this problem, move the antenna to a different location until a good transmission point is found. Often movement of only a few inches will help.

SERIAL CABLE PN. 03E2553 CONNECTOR WIRING

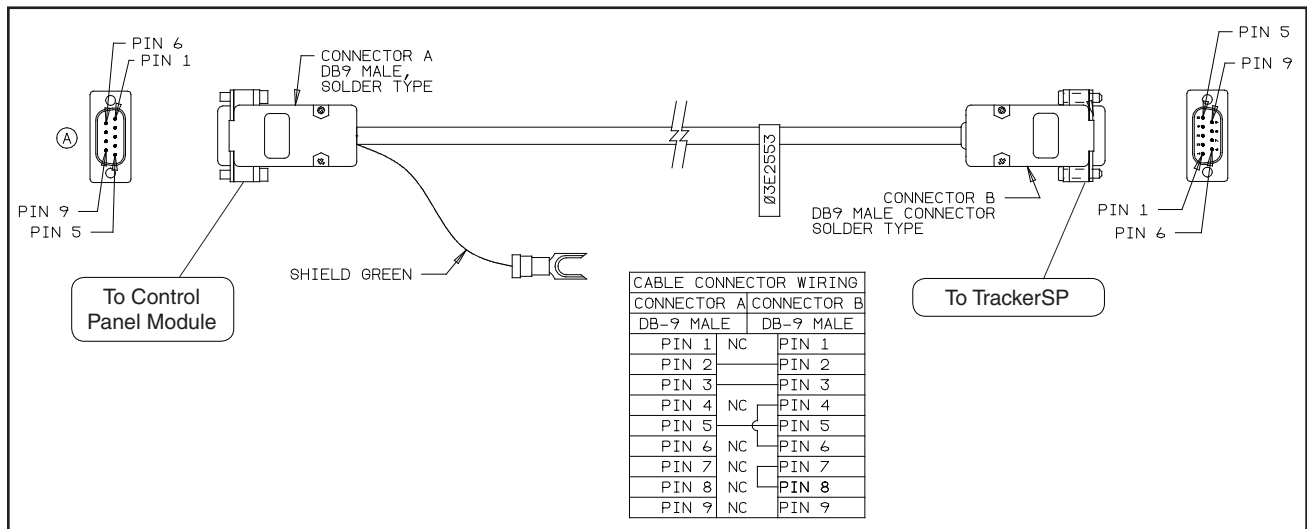


Figure 33-1

TROUBLESHOOTING

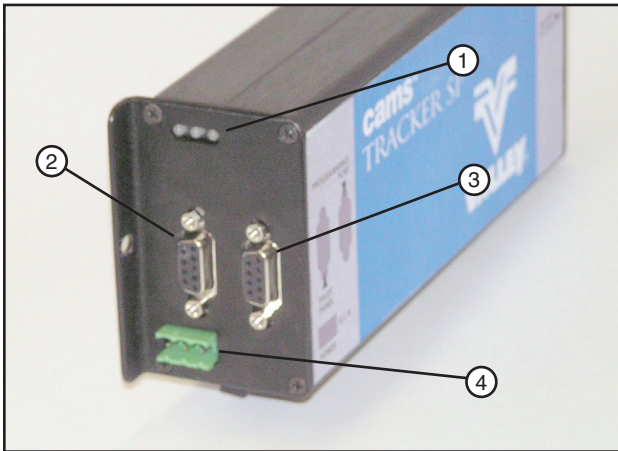


Figure 34-1
 1. LED's
 2. Pivot Panel Port
 3. Programming Port
 4. Power Port

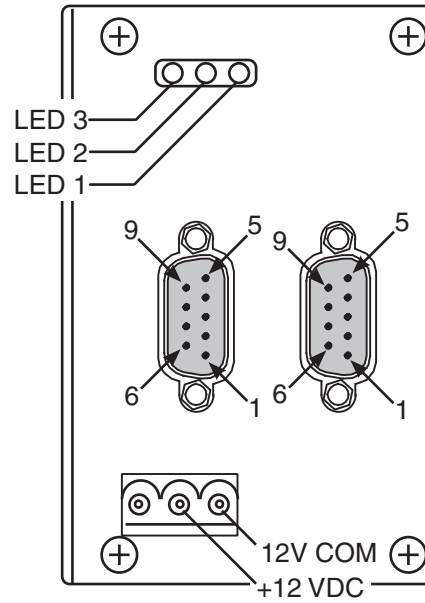


Figure 34-2

BATTERY ACCESS

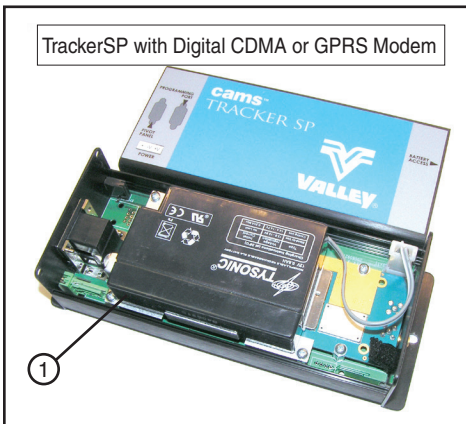


Figure 34-3
 1. Battery 12 VDC

TROUBLESHOOTING

LED INDICATORS

The LEDs can be useful in troubleshooting and system testing. See figure 35-1 and LED indicator table below.

There are three bi-color (red / green) LEDs:

- LED1 Indicates normal operation and cellular signal.
- LED2 Indicates radio (cellular) transmissions.
- LED3 Indicates control panel Communications.

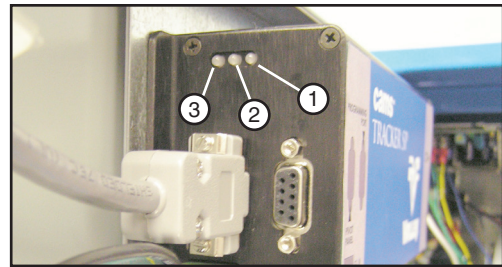


Figure 35-1

LED INDICATOR TABLE

	BLINKS	INDICATES	PROBLEM/CORRECTIVE ACTION
LED 1	Blinks red until the radio boots up and registers with the cell tower, then blinks green on and off every second.	Normal operation.	None
	Blinks red on and off every second.	Inadequate radio signal strength or No cellular service. The red blinks will continue until service is available.	Verify the antenna connection or move antenna to different location.
	LED is steady on or off.	The TrackerSP is not operating normally.	
	Short green blink.	Cellular Service Available with adequate radio signal strength.	None
LED 2	Long green blink (lasting ~ 1 second) about 2-5 seconds after a short green blink.	Successful Radio transmission.	None
	Red LED will light for 0.6 seconds.	Transmission attempt failed.	None
	Blinks RED on and off every second.	10 second delay before another call can be placed.	None
	Blinks RED on and off every second.	The daily call limit has been reached.	Reset daily call limit and/or increase daily call limit.
	Green blinks at a rate of ¼ second on and ¼ second off.	Waiting for the registration ACK from the TrackNET Website on B channel.	None
	Red blinks at a rate of ¼ second on and ¼ second off.	Waiting for the registration ACK from the TrackNET Website on A channel.	None
	Green LED will light for 0.2 seconds.	Unit receiving a Command from the web site.	None
	Alternates red & green on and off.	Radio is not Communicating with the processor.	Typically corrected automatically by internally retrying the Communication. If the lights continue to alternate red and green, there is a problem with the TrackerSP.
LED 3	Blinks green.	Sending data to control panel.	None
	Blinks red.	Receiving data from control panel.	None
	Blinks once green and red at a rapid rate.	Normal read/write operation.	None
	Only blinks green.	The control panel is not answering at all.	Troubleshoot control panel.
	Blinks red for 2-3 seconds.	The control panel is not responding as expected and is timing out.	Troubleshoot control panel.
ALL LED's	Solid ON red.	The unit is not loaded with valid operating parameters.	Download a new profile to the unit.
	Solid ON green.	Communicating with a personal computer running hyperterminal.	When the Communication is completed or the personal computer is unplugged, the three LEDs should resume normal operation.

TROUBLESHOOTING

COMMUNICATION TO THE CONTROL PANEL

The LED3 can be used to monitor the communications.

In a normal conversation, there is a series of very fast green and red blinks. If only the green or red LED lights up, then one device is not responding.

- When the TrackerSP transmits data to the control panel, the green LED will blink.
- When the Control panel sends data to the TrackerSP, the red LED will blink.

The control panel will not respond unless it receives a request that is addressed to its RTU ID number.

- Ensure that the control panel baud rate is set to 9600.
- Ensure that the control panel RTU ID is set to 000.
- Ensure that the serial cable is connected to the pivot panel port on the TrackerSP.
- Inspect the serial cable for correct connector termination.

COMMUNICATION TO THE TrackNET Website

Use the TrackerSP Service Tool, Communications Test to test communications to the TrackNET Website.

FAULTS AND ERRORS (TRACKERSP)

Below is a list of faults and errors that appear on the TrackerSP status details screen.

FAULT OR ERROR	PROBLEM	CORRECTABLE BY
COMMAND FAULT	Machine was shut off.	Refer to control panel Owner Manual
PRESSURE FAULT	Water pressure fell below low pressure limit.	Refer to control panel Owner Manual
SAFETY FAULT	Break (open) in the safety return circuit.	Refer to control panel Owner Manual
COMM ERROR	TrackerSP is not connected to control module. OR TrackerSP cannot communicate with control module.	DEALER ONLY
	ELECTRICAL PROBLEM	
SIS FAULT	Stop-in-Slot shut the machine off.	Refer to control panel Owner Manual

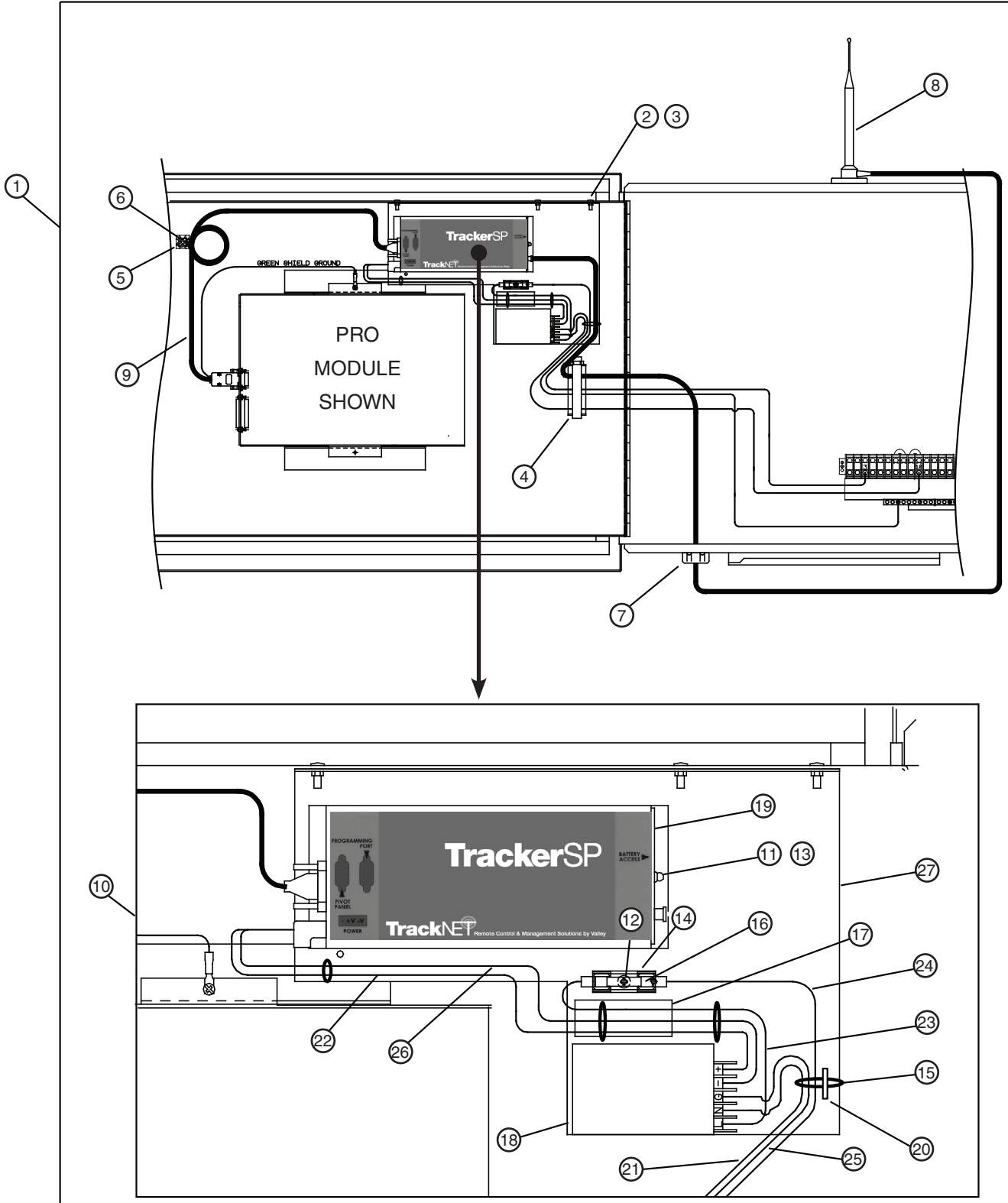
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PARTS

TRACKERSP KITS

PRO2, PRO V7, SELECT AND SELECT2 CONTROL PANEL



PARTS

TRACKERSP KITS PRO2, PRO V7, SELECT AND SELECT2 CONTROL PANEL

Item	Part No.	Description	Qty
1	KA09928	TrackerSP Kit, Digital GPRS Modem Multitech Domestic	1
	or		
	KA09927	TrackerSP Kit, Digital GPRS Modem Multitech International	1
	or		
	KA09933	TrackerSP Kit, Digital CDMA C24 Modem	1
2	•0134059	Nut #8, Hex W/External Tooth Lock washer	3
3	•0164110	Screw PH #8 X 32UNC-2A PLT	3
4	•0315840	Flat Cable Clamp 12 X 12 GW	1
5	•03E0046	Holder Self-Adhesive Wire TIE.75"	1
6	•03E1605	Cable Tie 5.50" Long Plastic Tie	8
7	•03E2132	Cord Connector, 1/2 Hub, .17 - .47 Cable	1
8	•03E2547	Cellular Antenna Magnetic Mount	1
9	•03E2553	Shielded Serial Cable Assembly	1
10	•9311773	Assm TrackerSP, Digital GPRS Modem Multitech Domestic	1
	or		
	•9311772	Assm TrackerSP, Digital GPRS Modem Multitech International	1
	or		
	•9311775	Assm TrackerSP, Digital CDMA C24 Modem	1
†	••0141037	Washer Lock PLT Internal Tooth #4.....	2
11	••0141038	Washer Lock PLT Internal Tooth #8.....	2
12	••0164225	Screw PH 6-32 X 1/4" Phillips Self Tapping	1
13	••0164226	Screw PH 8-32 X 1/4" Phillips Self Tapping	2
†	••0168023	Screw PH 3 MM X 6 MM PLT.....	2
14	••03E0070	Fuse Block, 1 1/4"	1
15	••03E1605	Cable Tie 5.50" Long Plastic Tie	4
16	••03E2081	Fuse, 1.0 AMP, 250V.....	1
17	••03E2082	Decal 1.0 Amp Fuse Decal	1
18	••03E2701	Power Supply 15V 1.7A RS-25-15	1
19	••03E2845	TrackerSP Device, Digital GPRS Modem Multitech Domestic	1
	or		
	••03E2865	TrackerSP Device, Digital GPRS Modem Multitech International	1
	or		
	••03E2861	TrackerSP Device, Digital CDMA C24 Modem.....	1
†	••• 03E2272	Battery, 12 VDC 0.8 Ah	1
20	••0994494	Tie Holder, Nylon.....	1
21	••1813386	18GA White 39.00 .38/.38.....	1
22	••1813491	18GA Red 18.50 .38/.38	1
23	••1814458	18GA Black 11.50 03E1584/.38.....	1
24	••1814459	18GA Black 40.00 03E1584/.38.....	1
25	••1814460	14GA Green W/Yellow 51.00 .38/.38.....	1
26	••1814493	18GA Red/Black 18.50 .38/.38.....	1
27	••9311168	Mounting Panel For Digital Phone Modem.....	1
†	••9311503	TrackerSP With Digital CDMA C24 and GPRS Modem Field Install	1

• Denotes item is included in the preceding assembly.

† Not illustrated.

PARTS
