Chapter 10 Remote Keys

10.1 Remote Key Connections (Invoke specific operation)

The M450 has 5 selectable remote key operations to choose from. They are Gross Accumulation, Net Accumulation, Print, Tare, and Zero. Only one remote key is allowed to be configured at a time.

The indicator provides connections for one remote key or momentary switch closure. Closing the connection will initiate the pre-selected remote operation. The remote key connection is located on connector J11. See figure 10-1.

The open circuit voltage across one of the switches is +5 VDC. A closed switch will conduct about 0.25 mA. Therefore a low voltage switch with gold contacts is recommended to insure the long term integrity of the switch closure. Mercury wetted switches will also perform well.

A momentary closure is all that is required. The pre-selected remote operation will be initiated at the time of the switch closure. An "extended period of time" for a remote key to be held closed is defined as a period overlapping another key (front panel or remote key) being pressed while the first key is still being held closed. The remote key does not repeat when held closed the way the front panel keys do. They are active only once. The key will not repeat the pre-selected operation until the contact is released and made again.

10.1.1 Remote Key Cable Recommendations

Multi-conductor cable with wires between 28 and 20 AWG and having an overall foil shield with drain wire or a braided shield should be used. Insulation resistance of the cable's wires should be 30 V minimum. Use a cable with the required number of conductors. Unused conductors are undesirable since they can act as antennae and radiate electrical noise into and out of the indicator enclosure.

Only one conductor should be inserted into each position of the J11 connector. If more than two switches are going to be connected across the remote key, then the multiple connections required should be made at the switches themselves, not inside the J11 connector.

Note:

Use very low capacitance rated cabling for the remote key connection. Longer cabling with higher capacitance ratings will tend to lock up the 450's operation.

10.1.2 Remote Key Connections

1. If strain relief J2 or J3 will be used, strip back the cable's jacket back 4.5". Retain enough of the cable's shield or drain wire so that it may be terminated to the rear panel stud at the corner of the main board.

2. Strip back the insulation of each wire about 1/4".

3. Twist the stranded wires together for ease of insertion into the connector. Smaller wire sizes may also be tinned if desired, but be sure to leave only a minimum amount of solder on the wire or it will not fit into the connector.

4. Refer to Table 10-1, Remote Key Selections, determine the required function for your remote key application. See figure 10-1 for Remote Key connections.

5. Loosen the rear panel strain relief to be used, J2 or alternatively J3 if J2 is already being used. Feed the cable into the enclosure through the strain relief.

6. Connect the wires into the appropriate positions of the J11 connector by pressing down on the white lever for that position while inserting the stripped wire. Release the lever when the wire is completely inserted.

7. After all wires have been connected, tie-wrap the wires together as close to the connector as possible. This will restrict the movement of a wire in case it were to come loose from the connector, preventing it from coming into contact with hazardous voltages. Tie-wraps are provided with each instrument in a bag along with the User's Guide.

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Parameter Selection	Remote Key Function
P800.00	**None!**
P800.01	**Gross Accumulation**
P800.02	**Net Accumulation**
P800.03	**Print**
P800.04	**Tare**
P800.05	**Zero**

Table 10-1 Remote Key Selections

8. Secure the cable's shield to the rear panel stud adjacent to the chosen strain relief.

9. Pull any excess cable back out of the instrument until there is no slack in the cable between the strain relief and the shield connection.

10. Re-tighten the strain relief securely so that even if the external cable is pulled or twisted the internal cable is unaffected.

10.2 Remote Key Setup

P800.XX Rmote

The Model 450 allows for one remote key operation. Parameter P800 allows for entry of the specific function of the remote key operation. Selections are described in Table 10-1, Remote Key Selections.

A momentary switch or contact closure across the J11 connector will execute the selected remote key operation. This same connector is also used for remote START operations involving the standard setpoint programs. Refer to Chapters 4 and 14 for more information involving remote setpoint STARTS.

10.3 Remote Key Examples

Example #1 Remote Gross Weight Accumulation
P800.01

A momentary switch or contact closure across the J11 connector will execute the **gross wt. accumulation** operation. The gross accumulation register (parameter 03) will be updated with its current value plus the displayed gross weight value. To view the results of this accumulation, print parameter 03 or add parameter 03 to the selectable operating modes. Refer to chapter 12 Operating Modes (300.XX parameters). See also Chapter 13 Accumulation Mode for more information about accumulation operations.

Example #2 Remote Net Weight Accumulation
P800.02

A momentary switch or contact closure across the J11 connector will execute the **net wt. accumulation** operation. The net accumulation register (parameter 06) will be updated with its current value plus the displayed net weight value. To view the results of this accumulation, print parameter 06 or add parameter 06 to the selectable operating modes. Refer to chapter 12 Operating Modes (300.XX parameters). See also Chapter 13 Accumulation Mode for more information about accumulation operations.

Example #3 Remote Print Operation
P800.03

A momentary switch or contact closure across the J11 connector will execute a **print** operation. The contents of the custom transmit will be directed out the comm port. Refer to chapter 8 Communications, to setup your custom printout. Note that the factory has applied a

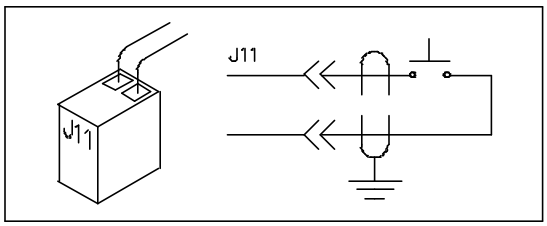

Figure 10-1 Remote Key Connection

default custom transmit in the unit. This is also presented in chapter 8 Communications.

Example #4 Remote Tare Operation
P800.04

A momentary switch or contact closure across the J11 connector will execute a **tare** operation.

NOTE: Make sure that the standard setpoint programs are not setup to activate on TARE if the remote key is used for a simple remote tare operation.

Example #5 Remote Zero Operation
P800.05

A momentary switch or contact closure across the J11 connector will execute a **zero** operation.