Technical Bulletin, Rosemount^{TM} 3095FB Multivariable Sensor Interface Using 68-6203 SV Module

NOTE: User Manual Reference - This Technical Bulletin complements the information contained in the User Manual, applicable to Firmware Revision 21.74+/25.74+ and 23/74, +/27.74.

Table of Contents

Figures

Scope

Firmware Revisions 21.74+/25.74+ and 23.74+/27.74+ of OMNI 6000/OMNI 3000 Flow Computers are affected by the issues contained in this Technical Bulletin. This Bulletin applies to Orifice/Differential Pressure Liquid Flow Metering Systems and to Orifice Gas Flow Metering Systems.

Abstract

The Rosemount 3095FB Multivariable sensor assembly is used to measure differential pressure (DP), static pressure (SP) and line temperature (T). Application of the 3095FB is limited to flow computer revisions 21, 23, 25 and 27 which work with differential head devices such as orifice meters, nozzles and venturi meters. Because the flow computer is limited to a maximum of four (4) meter runs it is also limited to a maximum of four (4) 3095FB multivariable transmitters.

Data is accessed from the 3095FB transmitter via a 2 wire RS-485 data link at 9600 baud using Modbus protocol. Technically, it would have been possible to use one of the flow computer's standard serial ports to communicate with the 3095FB but this would have caused several issues:

- Reduced the number of serial ports available for use with SCADA, PLCs and OMNICOM etc.
- Extra 'A' type combo modules would have to be purchased simply to provide analog outputs in a minimum system requiring just the multivariables.

OMNI chose to design a special 'SV' combo module which includes two (2), 2-wire RS-485 ports and six (6), 4-20 mA analog outputs. With this module it becomes possible to provide a powerful OMNI 6000/3000 system with the following specs:

- Four meter runs with Differential Pressure, Static Pressure and Temperature inputs
- Four communication ports for SCADA, PLC, Printer, OMNICOM etc
- Twelve Digital I/O for logic control
- Six digital to analog outputs

This SV module is capable of connecting to one to four 3095FBs in various multi-drop configurations. A second SV combo module can be utilized in applications where point to point operation of more than two (2) multivariable transmitters is desirable.

Important OMNI Flow Computer Compatibility Issues When Using SV Combo Modules

The 'SV' combo modules are effectively serial I/O modules which have been specially designed to communicate with various multivariable transmitters. Changes have been made to the IRQ priorities to accommodate these 'SV' combo modules. These IRQ changes also involve the 'Serial I/O Combo Modules' that are used to connect to printers, OMNICOM, PLCs and SCADA devices.

Serial Communication Module Compatibility

'SV' combo modules cannot be installed in flow computer systems containing RS-232-C Serial I/O Combo modules model type 68-6005. The IRQ settings on the 68-6005 serial combo module are not jumper selectable and are incompatible with the 'SV' combo modules. The flow computer will not be able to initialize or boot up if this module is installed (this will be evident by a blank LCD screen which flashes its backlighting on and off every 1.5 seconds).

The more recent 68-6205 serial module which is both RS-232-C and RS-485 compatible, has jumper selectable IRQ settings, these must be installed in the 'IRQ 3' position when an 'SV' combo module is present (TB-980503 for more details).

Other Known System Incompatibilities

At the time this bulletin was prepared, it was not possible to install both an 'SV' combo module and an 'HV' (Honeywell multivariable) combo module in the same unit.

Equipment Ordering Limitations

Because of the compatibility issues raised in the previous paragraphs, it is not possible for the customer to retrofit existing flow computer installations with 'SV' combo modules. Any system which requires 'SV' combo modules, must be purchased new from OMNI, or the system must be returned to OMNI to be modified. Contact Sales at sales@omniflow.com for upgrade details and pricing.

Connectivity Issues When Connecting to the 3095FB Multivariable Transmitters: Multi-drop versus Point-to-Point

The 3095 FB multivariable transmitter is a four (4) wire device, two (2) power wires and two (2) wires for the RS-485 serial communication link. It can be connected in a 'point-to-point' or 'multi-drop' wiring configuration.

Advantages of Multi-drop Configurations

The advantages of multi-drop configurations are:

- **Less wire may be needed to connect devices under certain conditions.** This may or may not be the case depending upon equipment placement.
- **One (1) OMNI SV Combo module can handle up to four (4) 3095 FB multivariable transmitters.** An OMNI 3000 can be used in place of an OMNI 6000 and handle four (4) meter runs.

Disadvantages of Multi-drop Configurations

Disadvantages of multi-drop configurations are:

- **Multiple Modbus IDs required.** Each multi-dropped transmitter must have a unique Modbus ID which matches the Modbus ID selected within the flow computer for that meter run multivariable.
- **Possibility of errors when replacing multivariable transmitters.** Because of the multiple Modbus addresses it is not possible to simply take a transmitter off the shelf and install it in a multi-drop configuration. This is because transmitters come from Rosemount with the Modbus address defaulted to '1' and there may already be a transmitter in the loop using that address. Adding a second transmitter with the same address as an existing transmitter would effectively cause a loss of signal on both transmitters (existing and new). Depending upon where the transmitter is in the wiring, 'termination' jumpers may or may not be required on the replacement transmitter.
- **Transmitter interaction is possible.** While not likely, a hardware failure in one transmitter could compromise the integrity of the shared RS-485 link causing a loss of flow signals for all meter runs. Calibrating a transmitter via a laptop computer requires the wiring to be disturbed. Care must be taken not to disconnect other transmitters in the same multi-drop loo.
- **RS-485 termination requirements are more complex.** RS-485 transmission wires must have only one beginning and one end (they cannot be used in a 'star' configuration). Both ends of the wire must be terminated, meaning only two (2) devices in the loop need terminating. In a point-to-point configuration, this simply means both the flow computer and transmitter are terminated. In a multi-drop configuration, the user must ensure that only the end devices have the termination jumpers in. This means that some transmitters may have the terminating jumpers in while others may have them out. Remember that the OMNI may or may not be at the end of the wire so it may or may not be one of the terminated devices.
- **Process variable update time may exceed the flow computers 500 msec cycle time.** Critical measurement or control systems require that the process variables be input to the flow computer as fast as possible for best performance.

Jumper Settings for the OMNI SV Combo Module

The Multi Variable 'SV' Combo module contains several sets of jumpers which must be installed correctly (Figure 1).
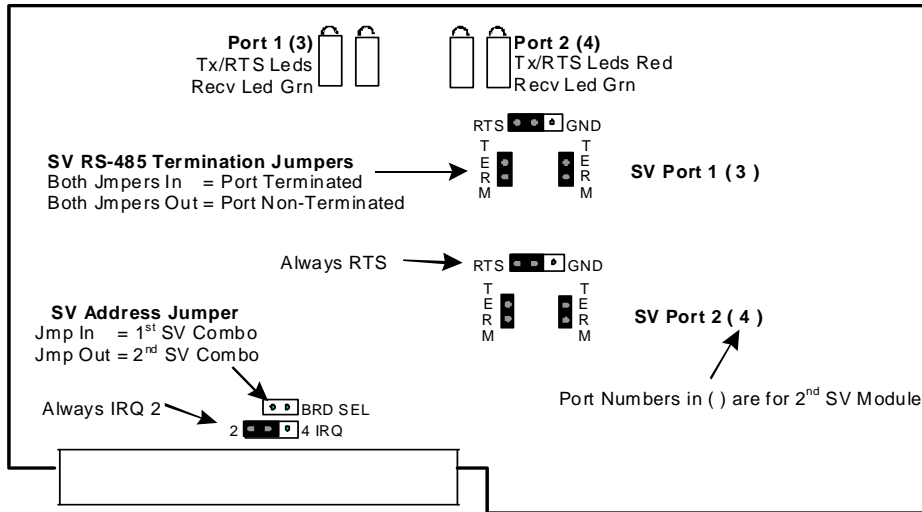
Figure 1. OMNI Model 68-6203 Multivariable Interface Module - SV Combo Module

Setting the Address of the SV Combo Module

The flow computer can accept up to two (2) **'SV'** Combo modules, each with a unique address determined by the 'BRD SEL' jumper shown in Figure 1. With this jumper fitted the flow computer will report that a 'SV1' module is installed and SV ports 1 and 2 will be available. Without this jumper in the 'BRD SEL' position the flow computer will report that a 'SV2' module is installed and SV ports 3 and 4 will be available. Note that a system can have a 'SV2' module without a 'SV1' being installed, in this case only SV ports 3 and 4 would be available.

Setting the Termination Jumpers for the Each of the SV RS-485 Ports

Multivariable RS-485 communication circuits must have two (2) ends only, **a 'star' configuration with more than two (2) ends or a 'loop' configuration with no ends is not allowed**. The devices at both ends of the circuit must be jumpered to provide termination.
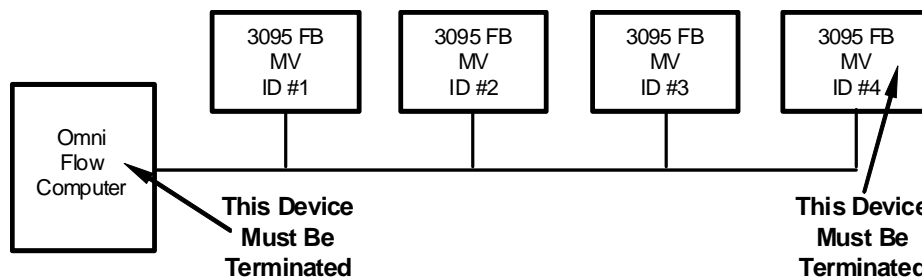
Figure 2. Multi-drop Configuration with Flow Computer Terminated

Both jumpers marked 'TERM' must be installed to terminate a flow computer 'SV' port (Figure 1). Termination settings for the 3095FB are shown later in this Technical Bulletin.
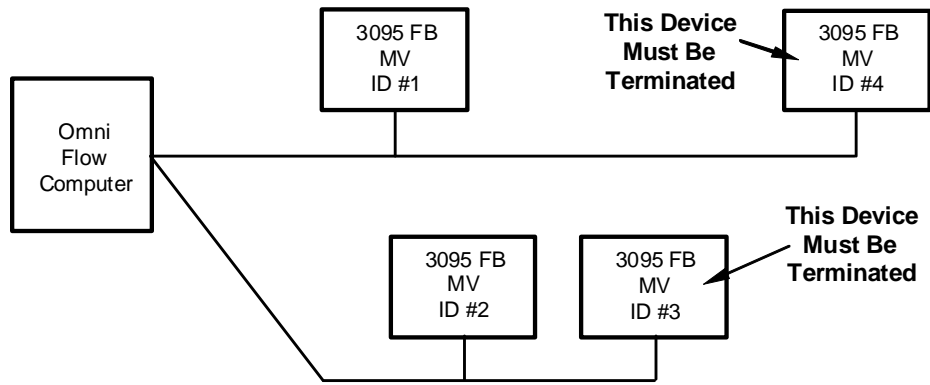
Figure 3. Multi-drop Configuration with Flow Computer Non-terminated

Star Configuration Not Allowed!
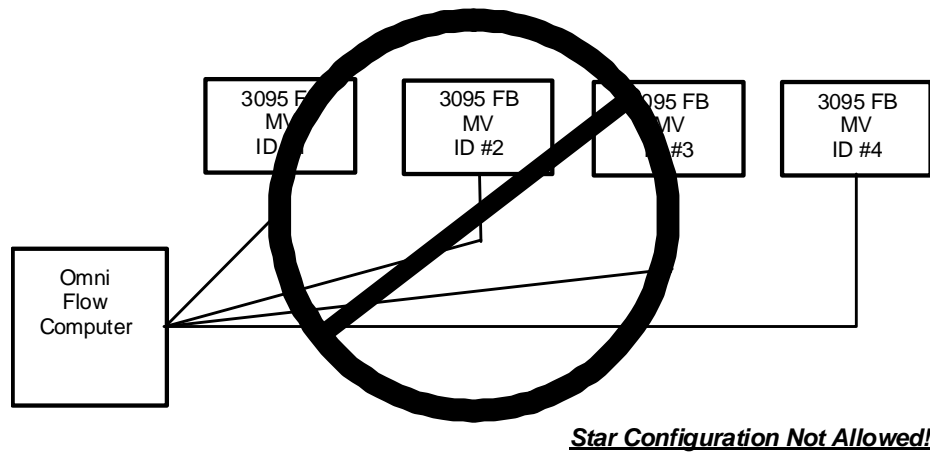
Figure 4. Unacceptable Configuration - Five Termination Points
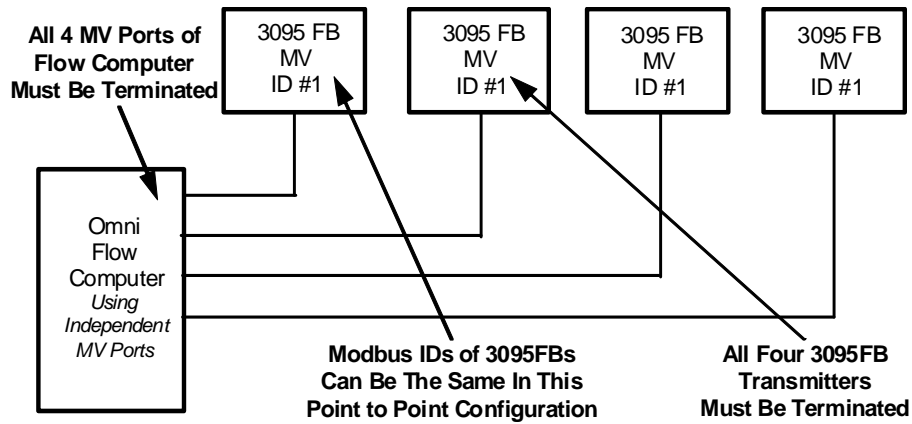
Figure 5. Point-to-Point Wiring Configuration

In the point-to-point configuration each 3095FB transmitter is connected to an independent 'SV' port of the flow computer. Because each 'SV' port is now connected to only one (1) 3095FB, each 3095FB can now use the default Modbus address '1', greatly simplifying transmitter replacement issues discussed in this Technical Bulletin.

Initial Setup of the Rosemount™ 3095FB Multi Variable Transmitter

The 3095FB module has two (2) sets of DIP switches and a jumper set which must be setup according to the wiring configuration used to connect to the OMNI Flow Computer.
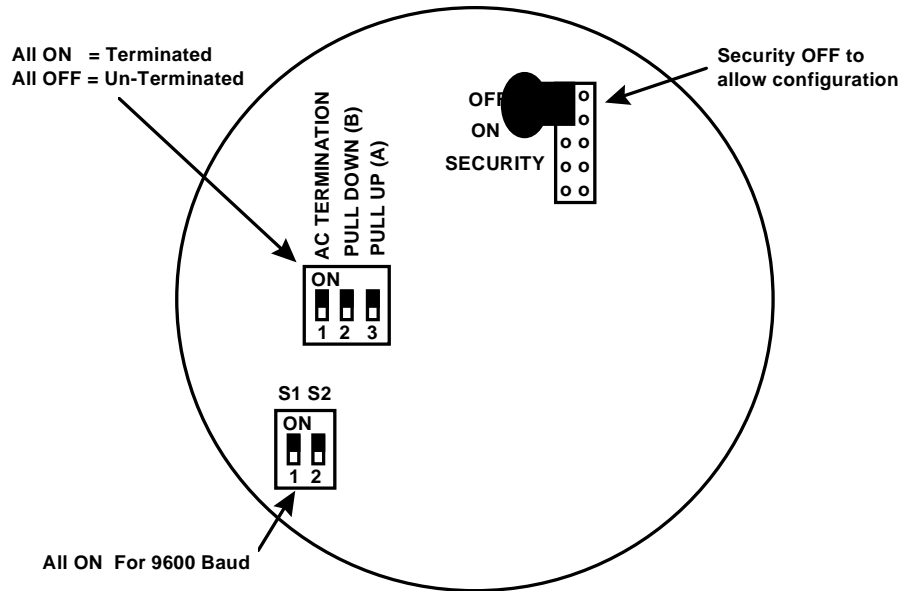
Figure 6. Rosemount™ 3095FB Multivariable Setup Switches and Jumpers

Place the security jumper in the 'OFF' position, this allows the OMNI Flow Computer to write to the 3095FB registers ensuring that the internal configuration matches the flow computer. Both baud rate switches S1 and S2 must be set to 9600; i.e., in the 'ON' position. The termination switches should be all 'ON' or all 'OFF' depending upon whether device termination is required.

Connecting the 3095FB to the OMNI Flow Computer

Table 1. Back Panel Termination Assignments – SV Combo Module

TERMINAL	SIGNAL DESCRIPTION
1	Port # (3) RS 485 B wire
2	Port #1(3) RS 485 A wire
3	Port #2(4) RS 485 B wire
4	Port #2 (4) RS 485 A wire
5	Signal Return for 4-20mA Outputs
6	Signal Return for 4-20ma Outputs
7	4-20ma Analog Output # 5
8	4-20mA Analog Output # 6
9	4-20mA Analog Output # 3
10	4-20mA Analog Output # 4
11	4-20mA Analog Output # 1
12	4-20mA Analog Output # 2
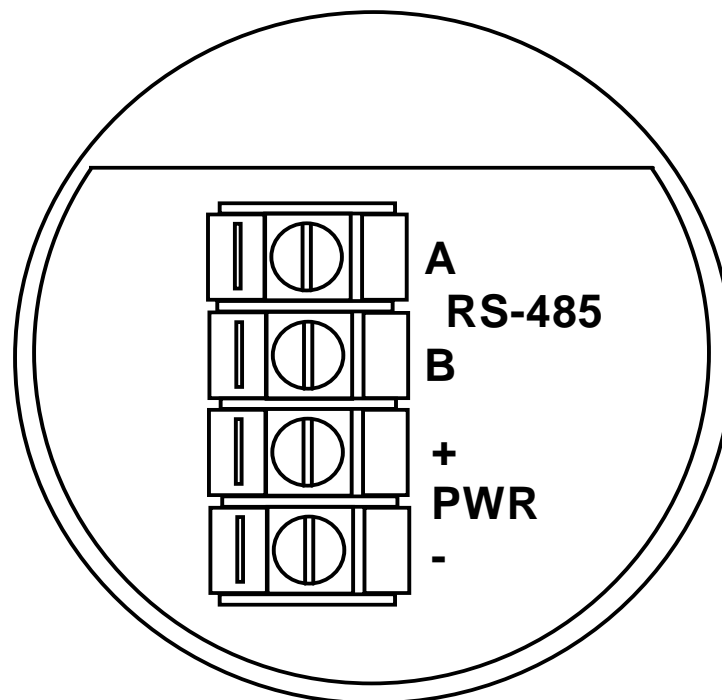
Figure 7. RosemountTM 3095FB Multivariable Wiring Terminals

3095FB Transmitter RS-485 Connections

Two (2) terminals are provided marked A and B, these are connected to the A and B terminals of other multi-dropped 3095FBs and to the OMNI SV Combo module terminals. These connections should be made using twisted pair unshielded wire with a minimum gauge dependent upon the distance to be run. Use 22 AWG minimum, 18 AWG maximum for runs less than 1000 ft. Use 20 AWG minimum, 18 AWG maximum for runs of 1000 to 4000 ft. Shielded twisted pair cable can be used but may have an attenuating effect due to a higher capacitance per foot thereby limiting the maximum wire run length to less than 4000 ft.

3095FB Transmitter Power Connections and Requirements

Terminals marked '**+**' and '**-**' are provided to connect the 3095FB to a 7.5 VDC. to 24 VDC. power supply. This power supply must be able to provide 10 mA per installed 3095FB plus an additional 100 mA which is required when any 3095FB in the system is transmitting data to the flow computer. Ripple on this power supply must be less than 2%. Wiring gauge should be selected as per the previous paragraph and can be unshielded un-twisted pair, but for best performance should be shielded and twisted.
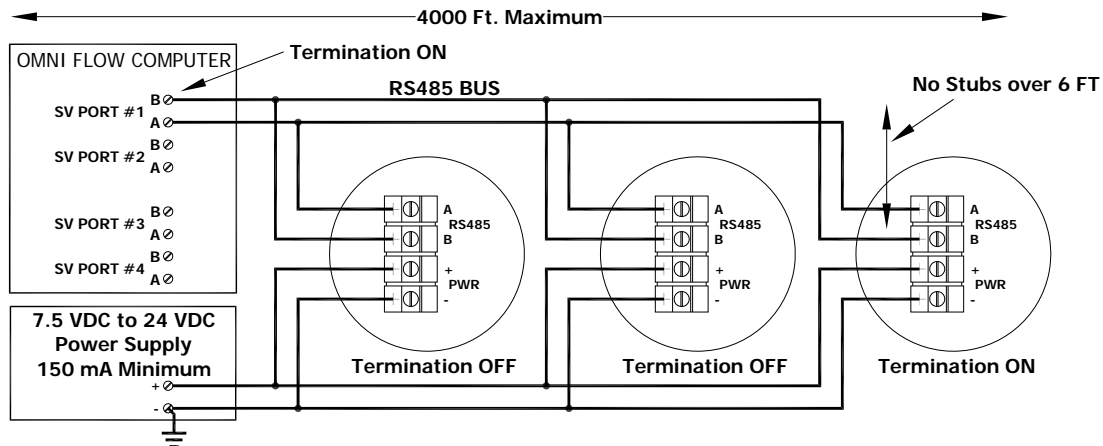
**Figure 8. Rosemount 3095 RS-485 Serial Ports in a Multidrop System. If there are
communications problems swap wires A and B on one end and try again.**

Isolation and Transient Protection Issues

The design of the 3095FB transmitter does not provide any DC isolation between the power connections and the RS-485 connections. Applying voltages between the power wiring and RS-485 wiring greater than the allowable common mode voltage of a RS-485 driver circuit could damage the 3095FB. The OMNI Flow Computer SV port is optically isolated and can handle common mode voltages of +/- 250 VDC with respect to chassis ground.

Inductive base transient protectors including the Rosemount Model 470 can adversely affect the output of the 3095FB. **Do not use the Model 470 for transient protection with the 3095FB**. If transient protection is desired, install the optional 'Transient Protection Terminal Block' described in Appendix B of the Rosemount 3095FB Manual (pub. 00809-0100-4738).

Wiring Considerations When Replacing a Multi-dropped 3095FB Transmitter

If downtime of other 3095FB transmitters in a multi-dropped system cannot be tolerated, make sure to provide a suitable and safe means of disconnecting power and signal from each individual 3095FB transmitter.

NOTE: Because of the power requirements of the RS-485 the 3095FB cannot be made 'intrinsically safe'. This means that proper safety procedures must be followed before any covers are removed from any devices or junction boxes located in hazardous areas. Refer to Rosemount 3095FB Manual (publication 00809-0100-4738) for correct installation of the 3095FB transmitter.

Configuring the OMNI Flow Computer to use the 3095FB Multi Variable Transmitter

Configuring the Meter Run I/O

Selecting the Device Type

The existing 'Select Turbine Y/N' entry in the **'Config Meter Run'** menu has been changed to '**Select Device Type**'. Valid selections at this point are:

> 0 = DP Sensor
> 1 = Turbine Meter
> 2 = 3095FB Multivariable
> 3 = SMV 3000 Multivariable

When '2' is selected the following entries appear:

Selecting the SV Combo Module Port

The number of ports available depends upon what SV Combo Modules are fitted in the flow computer. Ports 1 and 2 are available when SV Combo Module #1 is fitted ports 3 and 4 when SV Combo Module #2 is present. It is possible to have SV ports 3 and 4 without SV ports 1 and 2 assuming SV Combo Module #2 is the only SV module fitted.

Select Modbus Address for 3095FB

In point-to-point mode (i.e., each SV port is connected to a single 3095FB) it is recommended that you select Modbus ID '1' at this point. This is the default ID used by Rosemount when the 3095 is shipped. In multi-drop mode each 3095FB connected to a SV port must have its own address which can be between 1 and 247.

What I/O Points are Used and Why

Even though the multivariable data is obtained serially and not via analog input channels, the flow computer must have a storage structure in RAM to place the data. OMNI has chosen to treat the data as closely as possible to that obtained by conventional means and use the same physical I/O RAM structure as is used for analog inputs. The main difference being that with analog and pulse inputs you would manually assign the I/O points to be used for each input. When using the 3095FB multi variable, the flow computer automatically assigns three (3) I/O point assignments for the DP, temperature and pressure sensors within the 3095FB. The I/O point numbers are allocated in the **order** that the 3095FBs are configured using the device type three (3) entries (it has nothing to do with SV port or SV module numbers). The starting I/O point for the first 3095FB configured is the first point immediately after the last I/O point used by any other A, B, E/D, E or H combo modules in the system (Tables 2 and 3).

Table 2. I/O Points Used by SV Combo Modules – Example 1

EXAMPLE 1 CONFIGURATION	6000 – 2A – 1B – 1SV
A1 Combo Module I/O Points	1 - 4
A2 Combo Module I/O Points	5 - 8
B1 Combo Module I/O Points	9 - 12
1st 3095FB Configured Uses	DP=13, T=14, P=15
2nd 3095FB Configured Uses	DP=16, T=17, P=18
3rd 3095FB Configured Uses	DP=19, T=20, P=21
4th 3095FB Configured Used	DP=22, T=23, P=24

Table 3. I/O Points Used by SV Combo Modules – Example 2

EXAMPLE 2 CONFIGURATION	6000 – 1A – 1E/D – 1SV
A1 Combo Module I/O Points	1 - 4
A2 Combo Module I/O Points	5 - 8
B1 Combo Module I/O Points	9 - 12
1st 3095FB Configured Uses	DP=13, T=14, P=15
2nd 3095FB Configured Uses	DP=16, T=17, P=18
3rd 3095FB Configured Uses	DP=19, T=20, P=21
4th 3095FB Configured Used	DP=22, T=23, P=24

Bi-directional Flow and 3095FB Transmitters

Sometimes it is necessary to use a process variable obtained from a 3095FB in more than one meter run. For example, when measuring bi-directional flow it is customary to configure one meter run within the OMNI Flow Computer as 'forward' flow and a second meter run as 'reverse' flow. To do this, simply configure both meter runs as 'Device Type = 2 (3095FB Multi Variable)', select the same SV port and Modbus ID, the OMNI Flow Computer will recognize that both meter runs are using the same 3095FB device and allocate only one set of I/O assignments.

Referencing 3095FB Variables Elsewhere in the Configuration

While the DP, temperature and pressure obtained from the 3095FB multi variable are used to calculate flow, it may also be necessary to use either the temperature and/or the pressure to correct a densitometer device mounted in close proximity. To do this simply note the I/O point numbers automatically assigned to the 3095FB when it was configured and reuse these point numbers as needed.

DP, Pressure and Temperature Setup Entries Needed

Once I/O points have been assigned to the 3095FB multi variable transmitter, by the flow computer the Differential Pressure, Temperature and Pressure setup menus become active. Data entries in these menus are:

- Low Alarm Setpoint
- High Alarm Setpoint
- Override Value
- Override Code

    0 = Never Use Override Value

    1 = Always Use Override Value

    2 = Use Override on a 3095FB Communication Failure or Critical Error

    3 = Use Last Hour's Average on a 3095FB Communication Failure or Critical Error

- 4mA Value (read only)
- 20mA Value (read only)
- Damping Code

0 = 0.108 Seconds	5 = 3.456 Seconds
1 = 0.216 Seconds	6 = 6.912 Seconds
2 = 0.432 Seconds	7 = 13.824 Seconds
3 = 0.864 Seconds (Default)	8 = 27.648 Seconds
4 = 1.728 Seconds	

All of the data entries are changeable when using analog transmitters but when using the 3095FB multi variable transmitter the 4mA and 20mA scaling values cannot be changed. The upper and lower range of the 3095FB sensors are fixed by design. The OMNI Flow Computer simply reads these values and displays them in the 4mA and 20mA fields for information only. While the 3095FB transmitter has internal alarm setpoints and alarm status points, OMNI has chosen to ignore the 3095FB integral alarming functions and use the existing flow computer alarm setpoints and alarm status points. The Low and High Alarm Setpoints of the flow computer therefore behave exactly as they would with an analog transmitter. The 3095FB Critical Alarm states are monitored continuously.

Data Transferred between the 3095FB Transmitter and the OMNI Flow Computer

In operation the OMNI Flow Computer automatically sets up the 3095FB transmitter to use the correct floating point format and units of measure needed to match the flow computer's configuration. The OMNI continuously reads the following data:

- Process Variables DP, Pressure and Temperature
- Individual Transmitter Sensor Ranges
- Critical Transmitter Alarms (Sensor failures etc)
- Transmitter Information (Body and Fill material etc)
- Manufacturers Code
- Transmitter Tags

Polling Intervals for Process Variables and Critical Alarms

The message poll scheme comprises regular reads of the process variable values and critical alarms every 200msec per 3095FB connected to a flow computer SV port. This means that in a multi-drop system with four (4) transmitters the process variable update time will be 4 x 200msec or 800msec.

Critical 3095FB Alarms Monitored By the Flow Computer

Critical alarm points within the 3095FB are monitored and mapped into the OMNI Flow Computer Modbus database as shown in Table 4:

Table 4. Alarms Associated with the 3095FB Providing Data to Meter Run 'n'

MODBUS ADDRESS	ALARM POINT DESCRIPTION	ACTION TAKEN IF ALARM IS ACTIVE (SEE ALSO 'FAILURE CODE SETTING)
1n83	DP signal 10% above upper range limit	DP transmitter failure flagged
1n84	DP signal 10% below lower range limit	DP transmitter failure flagged
1n85	Pressure signal 10% above upper range limit	Pressure transmitter failure flagged
1n86	Pressure signal 10% below lower range limit	Pressure transmitter failure flagged
1n87	Pressure sensor is shorted	Pressure transmitter failure flagged
1n88	Pressure sensor bridge is open circuit	Pressure transmitter failure flagged
1n89	Temperature signal 10% above upper range limit	Temperature transmitter failure flagged
1n90	Temperature signal 10% below lower range limit	Temperature transmitter failure flagged
1n91	Temperature RTD is disconnected	Temperature transmitter failure flagged
1n92	Sensor internal temperature above upper range limit	DP, P and T, transmitter failures flagged
1n93	Sensor internal temperature below upper range limit	DP, P and T, transmitter failures flagged
1n94	Critical 3095FB sensor electronics failure	DP, P and T, transmitter failures flagged
1n95	Security jumper of 3095FB is set to 'Write Protect'	DP, P and T transmitter failures flagged if write to 3095FB is attempted and fails
*1n96	No communications between the OMNI and 3095FB unit	DP, P and T, transmitter failures flagged

*1n96 is flow computer generated

Synchronizing the 3095FB and the Flow Computer Configurations

To ensure that the flow computer correctly interprets the 3095FB data, the flow computer continuously verifies that the configuration of the 3095FB transmitter matches that required by the flow computer. Additional message polls verifying this data are interleaved with the normal message polls used to retrieve the process variables and alarms.

NOTE: Numbers in ( ) are Modbus addresses within the 3095Fb database

++ The flow computer will attempt to correct the database of the 3095FB transmitter if mismatches are detected for these variables.

 * The flow computer will adjust its database to agree with the 3095FB database if mismatches are detected for these variables.

Critical 3095FB configuration data which is checked every 10 seconds is:

- Floating Point Number Format   **(0132)
- Measurement Engineering Units of Measure   **(0060 - 0062)
- Minimum and Maximum Ranges of each Signal   *(7407 - 7416)
- Transmitter Identification (Information Only)   (0001 - 0011)
- Damping Factors   **(7421, 7424, 7427)
- Transmitter ASCII Tags (3x8 characters)   **(0032 - 0047)
- Transmitter Information (Materials of Construction)   (0017 - 0029)

Viewing the 3095FB Data at the Flow Computer Front Panel

Differential Pressure, Temperature and Pressure variables and averages are viewed using the normal key press combinations as described in the OMNI Flow Computer User Manual.

A display list of 3095FB transmitter information can be displayed by pressing 'Setup' 'n' 'Enter'. Data is organized by SV port number 'n' and in the order that the transmitters were configured. The information and diagnostic data is displayed (example shows first transmitter on the #1 SV port as an example):

NOTE: 1st digit is the SV port number, 2nd digit is the Modbus Address of the 3095FB

```
SV Port 1 - 1
Manufactur  Rosemount
Model      3095/Modbus
Out Board Rev   108.0
```

If you continue to scroll down, the following data will be displayed:

```
Sensor Mod Rev   142
Sensor Serial 839193
Xmtr Ser       19644
H/W Rev            3
Modbus Rev         5
Sensor Type       GP
DP Range -250 to 250
SP Range   0-800 psi
PT Range-40 to 1200F
Isolator Mat'l 316SS
Fill Fluid  Silicone
Flange Mtr'l   316SS
Flange Type Coplaner
Drain/Vent     316SS
O-Ring PTFE (Teflon)
Seal type       None
Seal Fill       None
Seal Isolator   None
Number of Seals None
```

Installing, Replacing and Calibrating 3095FB Transmitters

Wiring Issues

If downtime of other 3095FB transmitters in a multi-dropped system cannot be tolerated, make sure to provide a suitable and safe means of disconnecting power and signal from each individual 3095FB transmitter.

NOTE: Because of the power requirements of the RS-485 the 3095FB cannot be made 'intrinsically safe'. This means that proper safety procedures must be followed before any covers are removed from any devices or junction boxes located in hazardous areas. Refer to Rosemount 3095FB Manual (publication 00809-0100-4738) for correct installation of the 3095FB transmitter.
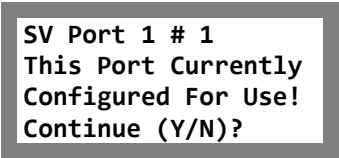
Using the OMNI Flow Computer to Set the Modbus Address of the 3095FB

The 3095FB transmitter will normally be shipped with a default Modbus address of **'1'.** While this is fine for a point to point installation, it will cause a problem if two (2) or more devices have the same Modbus ID in a multi-drop scheme. The Modbus ID of a transmitter can be set using the 'Configurator User Interface PC Software' available from Rosemount. It is anticipated though that some situations may arise where a 3095FB transmitter must be installed or replaced without this software being available. In this case the OMNI Flow Computer can be connected to a 3095FB in the point to point mode using any available SV port and the Modbus ID changed to what is required in the flow computer configuration.

CAUTION: ⚠️This procedure involves 'broadcast' transmitting a Modbus address out of a SV port. All devices connected to this SV port will have their Modbus address set to the ID broadcast. This would cause data collisions and a complete loss of communication when more than one 3095FB transmitter is connected. Be sure to temporarily disconnect any 3095FB transmitters which addresses you do not want to change.

Proceed as follows:

1.   Setup the 3095FB as described previously in the section titled 'Initial Setup of the Rosemount 3095FB Multi Variable Transmitter'.

2.   Setup the 3095FB to be RS-485 terminated.

3.   Connect the transmitter to any open SV port (terminal A to A, B to B). The SV port should be jumpered for RS-485 termination. If this SV channel is not an open channel, all 3095FB transmitters except the one needing the address change must be disconnected.

4.   Apply power to the 3095FB transmitter.

5.   At the flow computer front panel press the following keys:

       [Alpha Shift] [Diag] The computer will enter the Diagnostic mode.

       [Setup] [*n*] [Enter] Where 'n' is the SV port number that the 3095FB is connected to*.*

6.   The following warning screen may display (SV port 1 is used as an example) or the screen in (7) will display.

```
SV Port 1 # 1
This Port Currently
Configured For Use!
Continue (Y/N)?
```

       This means that the flow computer has detected that this SV port is currently configured to communicate with one (1) or more transmitters. You may or may not have selected the wrong SV port (refer to CAUTION).

7. If you wish to continue with the address broadcast operation enter 'Y' and the following screen will display.

```
SV Port 1 # 1
Change Xmtr Address
New Address        _
Idle
```

8. Scroll down to 'New Address' and enter the address required. Press 'Enter' and the following message will display.

```
Sending New Address
```

9. The flow computer will wait a short time and then attempt to communicate with the 3095FB using the new address. If communications are established the following message will be displayed for a few seconds.

```
Address Changed
```

The following message will display for a second or two (2) should the transmission fail.

```
Failed Change
```

Should this message appear check your wiring, switch and jumper settings and repeat the procedure.

10. Disconnect and reinstall 3095FB to the appropriate SV port for normal operation making sure to observe the termination requirements of only two (2) devices at the end of a loop being terminated.

Using a Laptop PC to Trim the 3095FB Calibration

The flow computer provides no way of calibrating or trimming the output of the 3095FB multi variable transmitter. To calibrate the transmitter use the 'Configurator User Interface PC Software' available from Rosemount. The user must disconnect the 3095FB needing calibrating and connect it in point to point mode with the Laptop or PC running the Rosemount Interface Software. **Remember to follow all correct safety procedures when removing transmitter covers or junction boxes. Read the manufacture's warnings and recommendations as printed in the 3095FB manual.** Be aware that when removing a transmitter from a multi-drop installation, wiring may be disturbed and disruption of the circuit may cause a loss of all measurement signals due to loss of power, signal or RS-485 termination.

DOCUMENT REVISION HISTORY

DOCUMENT INITIAL RELEASE DATE 22-May-2003

REVISION	DATE	PURPOSE / CHANGE REQUEST
A	22-May-2003	Maintained on the Web - Initial release
B	13-April-2009	DCR 090101
C	12-March-2012	DCR 120031