

**Scanner 2000**  
**Steam Mass Flow Transmitter**  
**Installation and Maintenance Instructions**

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- 2. Mechanical installation*
- 3. Configuring software*
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# *1. Safety information*

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Safe operation of this product can only be guaranteed if it is properly installed, commissioned, used and maintained by qualified personnel in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

## **1.1 Intended use**

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use/application.

- i) Check material suitability, pressure and temperature and their maximum and minimum values. If the maximum operating limits of the product are lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or overtemperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations.
- ii) Determine the correct installation situation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.
- v) Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.

## 2. Mechanical installation

### 2.1 General requirements

It is important that the Scanner 2000 is installed with the correct pipeline unit. Please check that the serial number on the pipeline unit matches the one that is on the Scanner 2000 application tag.

The installation must conform to all relevant construction and electrical codes.

**Warning:** The standard Scanner 2000 is not approved for hazardous area applications.

CSA/FM and ATEX/CENELEC versions are available on request.

#### 2.1.1 Environmental conditions

The transmitter should be located in an environment that minimises the effects of heat, vibration, shock and electrical interference.

**CAUTION:** Exceeding the specified temperature limits will invalidate the warranty and can adversely affect the performance and may damage the Scanner 2000

#### 2.1.2 Other considerations: Be sure to allow sufficient clearance for:

- Installation of the impulse piping.
- Installation of conduit wiring.
- Removal of the display cap.

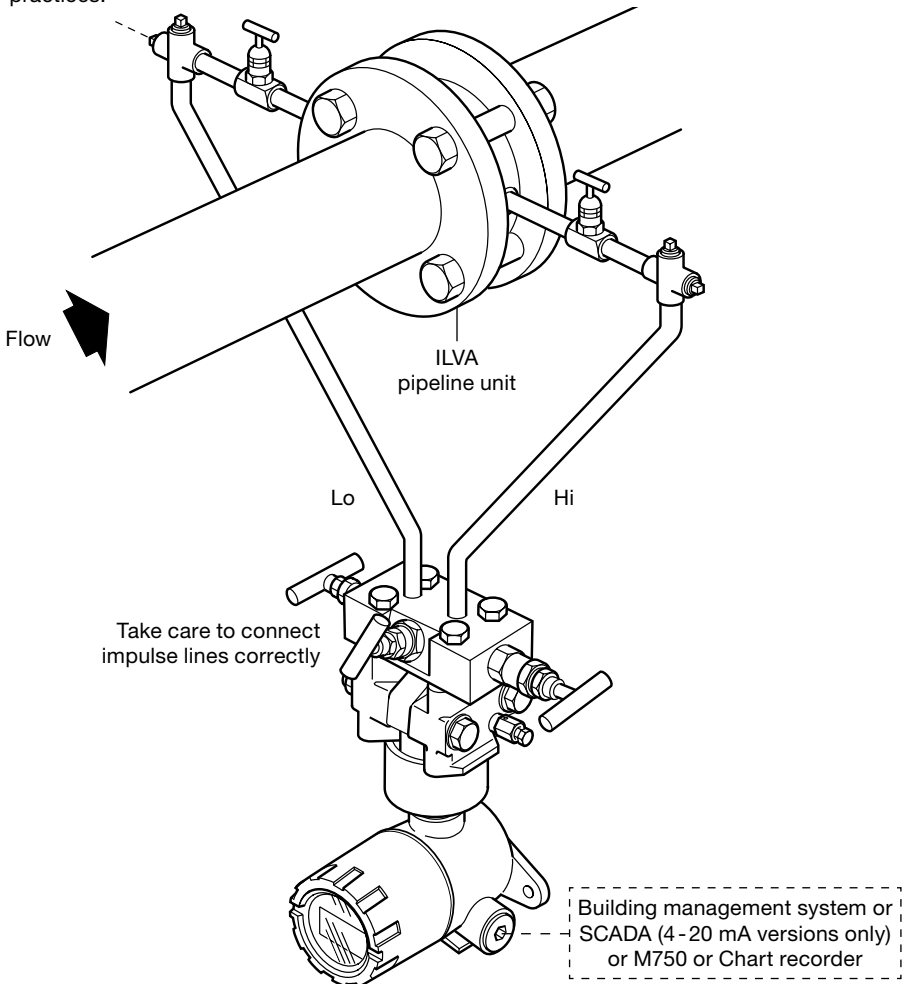
#### 2.1.3 Mounting the transmitter (see page 27 of the Hardware user manual)

The Scanner 2000 can be mounted using the bracket and 'U' bolts which are supplied. Mounting can be to a vertical or horizontal 2" (50 mm) pipe, or it can be surface mounted.



## 2.2 For installation of an ILVA on steam: -

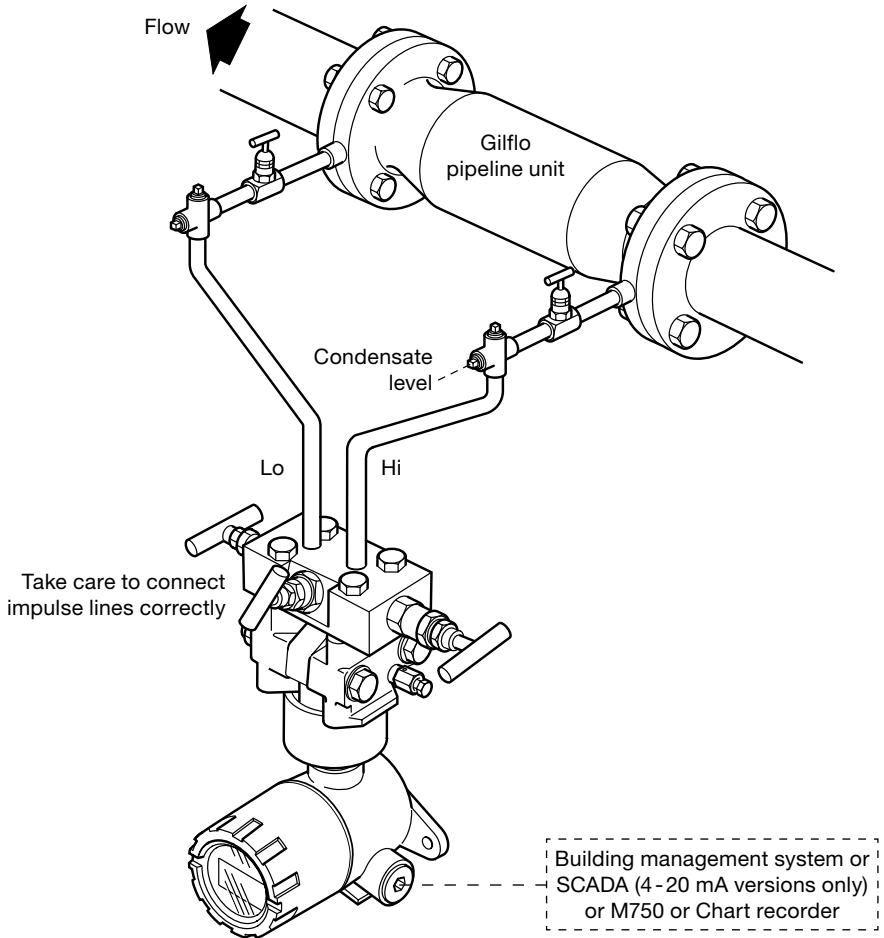
Before installing the Scanner 2000 please consult the hardware manual (page 39) for best practices.



### Installation points to watch:

1. Ensure all pipework is adequately supported and properly aligned.
2. The **minimum** recommended lengths of straight pipe are 6D upstream and 3D downstream. For full details see the ILVA Installation and Maintenance Instructions.
3. Ensure correct direction of flow is as indicated by the arrow on the ILVA body.
4. Avoid reverse flow through the ILVA.
5. Do not install the flowmeter downstream of a pressure reducing valve this may cause inaccuracies and /or damage. Avoid installing the flowmeter downstream of a partially open valve.
6. Actuated valves may cause rapid pressure fluctuations that could cause damage.
7. Provide adequate line drainage upstream of the flowmeter for all steam applications.

## 2.3 For installation of a Gilflo on steam: -



### Installation points to watch:

1. Ensure all pipework is adequately supported and properly aligned.
2. The minimum recommended lengths of straight pipe are 6D upstream and 3D downstream. For full details see the Gilflo Installation and Maintenance Instructions
3. Ensure correct direction of flow is as indicated by the arrow on the Gilflo body.
4. Avoid reverse flow through the Gilflo.
5. Do not install the flowmeter downstream of a pressure reducing valve this may cause inaccuracies and/or damage. Avoid installing the flowmeter downstream of a partially open valve.
6. Actuated valves may cause rapid pressure fluctuations that could cause damage.
7. Provide adequate line drainage upstream of the flowmeter for all steam applications.

## 3. Configuring software

Please note that if the Scanner 2000 has been supplied as part of an ILVA or Gilflo system, this option will have been configured during manufacture.

**Note:-**

A DB9 Serial RS232 to RS485 converter will be required to connect your PC to the Scanner 2000 if it does not have an RS485 serial port. If your PC only has USB ports, a USB to DB9 Serial port converter will be required. These are available from most electronics suppliers.

**Step 1** - Make sure that the Scanner 2000 is connected to a laptop or PC and power has been supplied to the unit.

**Step 2** - Start the selection process by opening the ModWorx pro software. Open the software by double clicking on the Icon shown below:

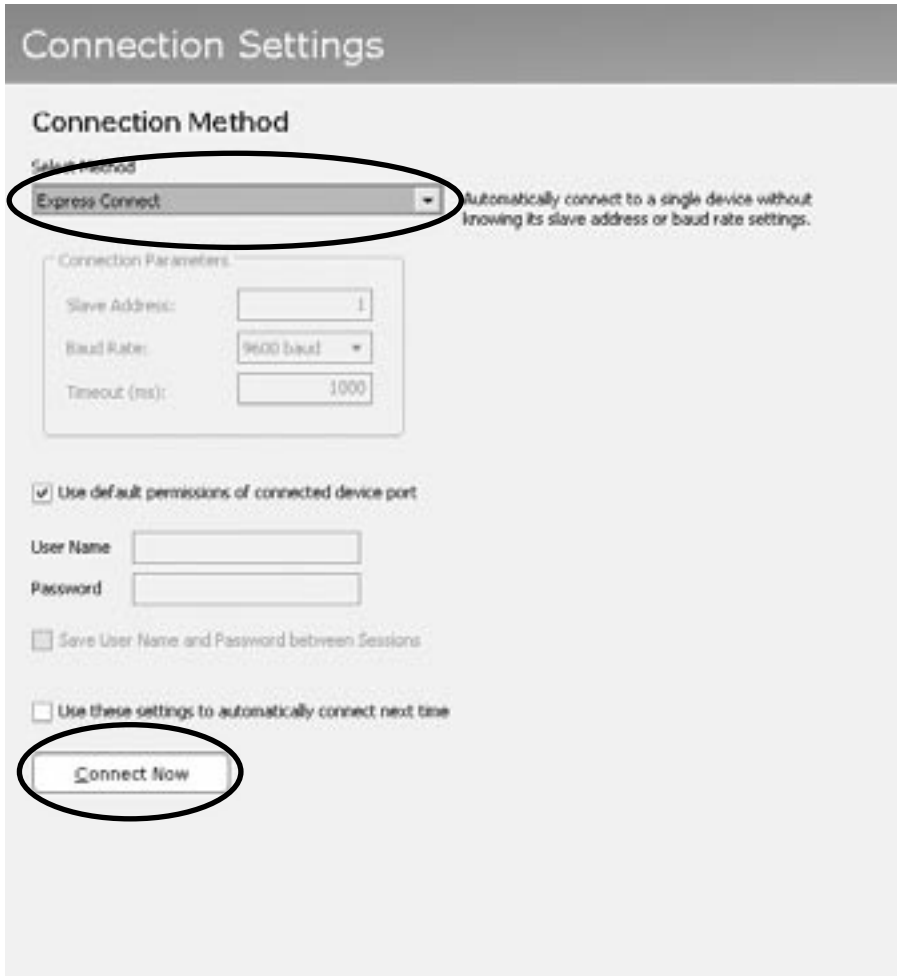


(Version numbers may vary)

**Step 3** - Click on the 'connect' button as shown below:



**Step 4** - Make sure that the 'Express Connect' option has been selected in the drop down box, entitled 'Select Method'. Tick the 'Use default permissions of connected device port' box and click on the 'connect now' button.



**Step 5** - On the following screen please select 'Configure'.



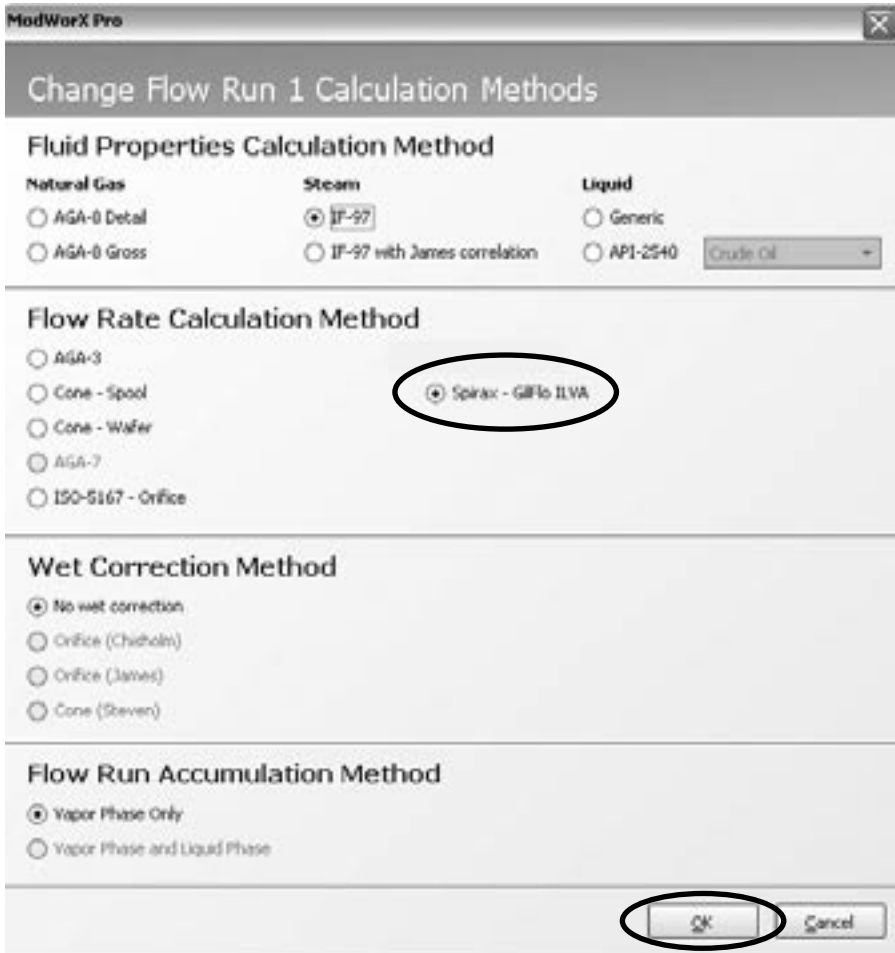
**Step 6** - From the options on the 'Scanner 2000 Configuration Menu' select 'Flow Run 1'.



**Step 7** - In the 'Configure Flow Run' menu, under the section entitled 'Flow Rate Calculation', click the 'Change' button as circled below:



**Step 8** - Please select your calculation method, and flowmeter type from the 'Flow Run 1' menu. In the example below, the 'IF-97 Steam Calculation Method' has been selected with the 'ILVA type Flowmeter', as the ILVA flowmeter will be used to measure steam flowrate in conjunction with the Scanner 2000:



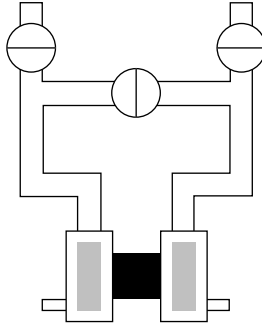
When you have selected the calculation method and flowmeter type please click on the 'OK' button.

**Step 9** - The selection of the flowmeter is now complete.

# 4. *Placing the Scanner 2000 into operation*

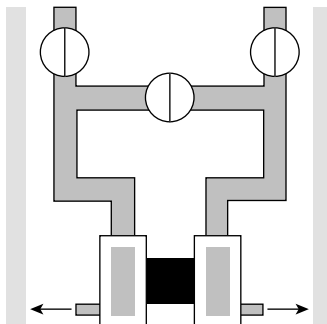
To put the scanner into operation:

**Step 1** - Make sure that all valves on the manifold are in the closed position.



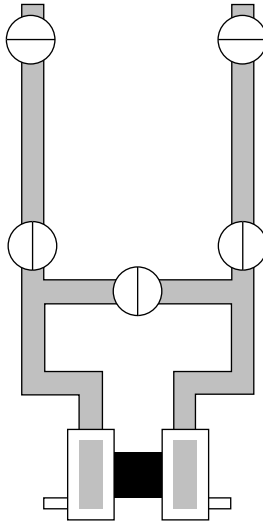
**Step 2** - Ensure impulse lines have been primed with cold water or antifreeze (depending on application).

**Step 3** - Open isolation valves and bleed valves on manifold to purge the Scanner 2000 of air.



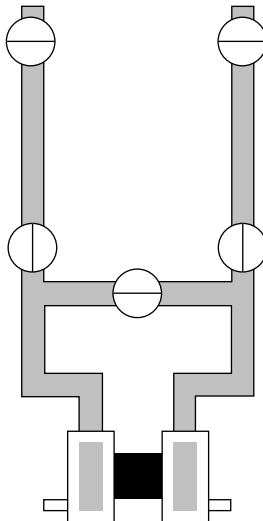
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**Step 4** - Shut off isolation valves at the flowmeter and the bleed valves on the manifold.



**Step 5** - Turn the system pressure on (optional but recommended)

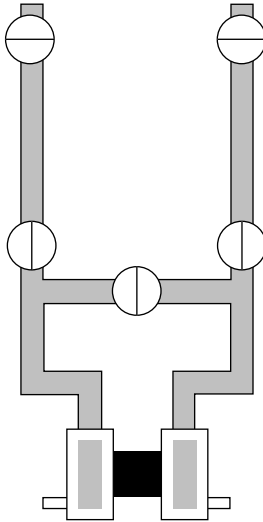
**Step 6** - Open equalization valve.



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**Step 7** - Check the 4 mA output.

**Step 8** - Close the equalization valve.



**Step 9** - Open isolation valves on the impulse lines at the flowmeter.

