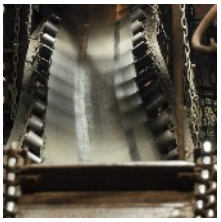
TROLEX

TX5921/TX5922/TX5923
INSERTION VORTEX GAS FLOW SENSOR

INSTALLATION & OPERATING DATA

ATEX
Ex ia
GROUP I M1
GROUP II 1G
INTRINSICALLY SAFE

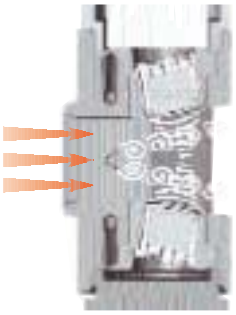


TUNNELS
•
PIPELINES
•
ROADWAYS
•
VENTILATION DUCTS
•
MINING
•
PROCESS INDUSTRIES

contents...

ISSUE P 06/14

1 PRINCIPAL OPERATING FEATURES



The vortex flow velocity sensing system provides high accuracy, flow measurement free from drift and mechanical deterioration.
As the stream of gas passes through the sensing head, vortices are generated by a transverse strut or 'Bluff Body' positioned in the flow path. The vortex frequency is proportional to the flow velocity and this frequency is detected by an ultrasound beam accurately located downstream of the strut.
This information is processed by a specially designed software programme to provide user configurable information display and a conditioned output signal.

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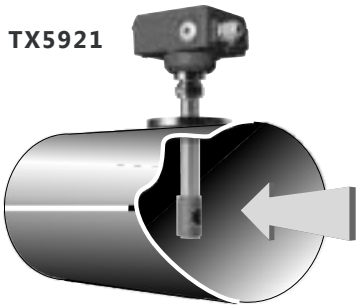
- Programmable information display for zero, span, signal offset, volumetric calculations, engineering units, turndown, damping, display suppression, fault mode, contrast, signal clamp.
- Language display text options.
- Keycode software security protection.
- Simple pushbutton scaling to match on-site parameters. Signal offset, elevated zero, etc.
- Sensing probe has standardised output for simple servicing without the need for a calibrated wind tunnel.

- Output signal versions: 4...20 mA • 0.4 ...2 V • 5...15 Hz.
- Rangeable velocity from 0.5 m...30 m/sec.
- High pressure versions up to 20 bar.
- Stainless steel sensing probe or special version with PTFE protective coating.

- Non-standard sensing probe length for specific applications.
- Non standard cable length on remote connected version for specific applications.
- Intrinsically Safe version for use in Group I and Group II hazardous areas.
- Automatic self test function.

2 APPLICATION

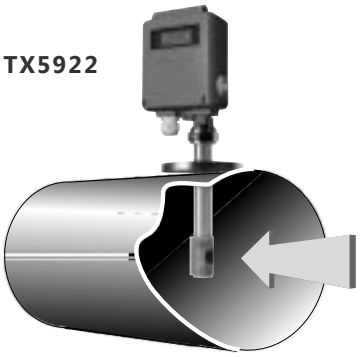
TX5921



Flow velocity measurement or volumetric measurement of air, gases and vapours in pipes, ducts and open areas.

- Ventilation systems.
- Cooling systems.
- Plant protection.
- High accuracy transfer metering.
- Environmental control and monitoring.
- Roadway and tunnel ventilation.

TX5922



- Versions with an integral sensor or a remote mounted sensor with a choice of adjustable mounting bush or flange fittings for pipelines and ducts.

N.B. High pressure versions above 2bar, are fitted with a WELDED bush or flange to specific design information.

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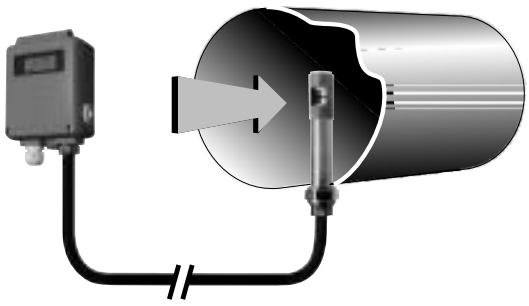
TX5923

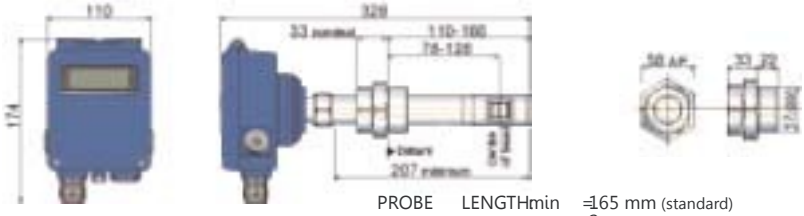


TX5922

- Versions with side projecting sensor used mainly for back mounting in open area applications (eg. tunnels and roadways).

3 DIMENSIONS & MOUNTING

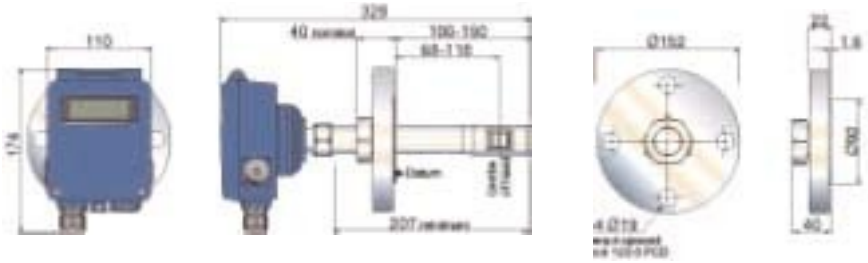
TX5921 REAR PROJECTING SENSOR with 1½ " BSP MOUNTING BUSH



PROBE LENGTH min = 165 mm (standard)
max = 2 m

NB:
Housing can be rotated through 300° with respect to the sensing head.

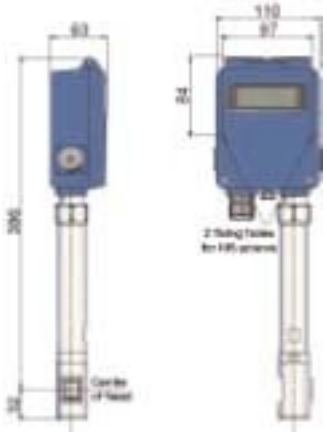
TX5921 REAR PROJECTING SENSOR with 50 mm ANSI MOUNTING FLANGE



PROBE LENGTH min = 165 mm (standard)
max = 2 m

NB:
Housing can be rotated through 300° with respect to the sensing head.

TX5922 SIDE PROJECTING SENSOR



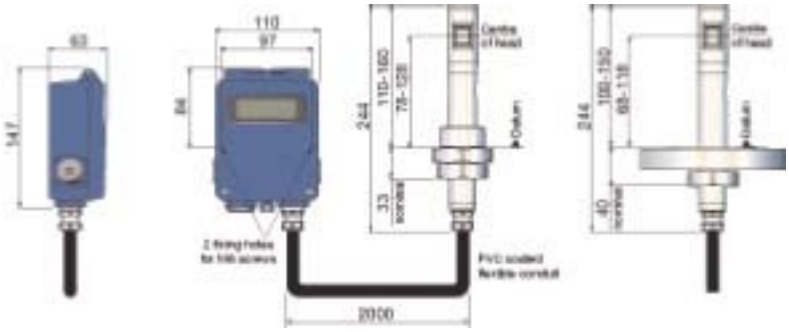
PROBE LENGTH min = 165 mm (standard)
max = 2 m

NB:
Housing can be rotated through 300° with respect to the sensing head.

TX5923 REMOTE SENSOR

FITTED WITH 1 ½ " BSP MOUNTING BUSH

FITTED WITH 50 mm ANSI FLANGE



PROBE LENGTH min = 165 mm (standard)
max = 2 m

All dimensions in mm

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4 TECHNICAL DETAILS

4.1 Specification

	TX5921 REAR PROJECTING SENSOR	TX5922 SIDE PROJECTING SENSOR	TX5923 REMOTE SENSOR
			
Flow Measuring Range	Rangeable from 0.5 to 5 m/s up to 0.5 to 30 m/s linear flow velocity.		
Accuracy	±2% characterised to the sensing element (within 12.5° rotation of flow axis).		
Linearity	±1% (within 12.5° rotation of flow axis).		
Housing Temperature	-15 to +50°C.		
Sensor Temperature	–15 to 150°C (200°C available to specification).		
Humidity	0 to 95% non condensing.		
Protection Classification	Dust and waterproof to IP66.		
Housing Material	Stainless steel reinforced polymide 6.		Stainless steel reinforced polymide 6. 2 m – 3 core cable with PVC coated flexible conduit protection to the sensor. (Cable lengths up to 10 m can be supplied specification).
Sensor Material	Stainless steel (PTFE coated versions available to specification).		
Sensor Static Pressure	20 bar (limited to 2 bar max with standard mounting accessories).		
Process Fitting	• 1½" BSP mounting bush. • 50 mm ANSI Flange. (also available with welded process fittings for high pressure applications to specification).	Wall mounting.	• 1½" BSP mounting bush. • 50 mm ANSI Flange. (also available with welded process fittings for high pressure applications to specification).
Cable Entry	2 x M20.		
Electrical Connections	4 mm barrier/clamp terminals.		
Nett Weight	1.5 kg.	1.5 kg.	2.5 kg.
Information Display	17 character dot matrix alpha numeric LCD		
Operation	Microprocessor controlled with non-volatile data retention.		
Menu System Keycode Protection	• Programming of Span and Zero • On-site scaling • Signal offset • Failure mode • Turndown • Volumetric Calculation • Engineering units • Signal damping • Display contrast • Display suppression • Signal fix.		
Master Reset	Text language: English German French Spanish		

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4 TECHNICAL DETAILS continued

4.2 Electrical Details

GENERAL PURPOSE APPLICATIONS

Output Signal:	4...20 mA
Max. Load:	600 ohms at 24 V dc
Power Supply:	10...30 V dc
Max. Current:	40 mA

GROUP II APPLICATIONS

Output Signal:	4...20 mA	
Max. Load:	600 ohms at 24 V dc	GROUP II Ex ia IIC T4 Ga
Power Supply:	10...30 V dc	
Max. Current:	40 mA	

GROUP I APPLICATIONS

Output Signal:	4...20 mA	0.4...2 V	5...15 Hz	
Max. Load:	300 ohms at 12 V dc	10K ohms at 12 V dc	Opto isolated 2 mA max.	GROUP I Ex ia I Ma
Power Supply:	6.5...16.5 V dc			
Max. Current:	40 mA	15 mA	30 mA	

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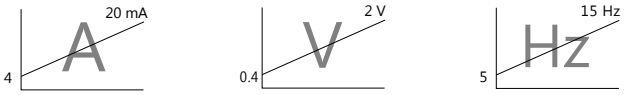
CE Designed to comply with the requirements of the EC directive on: ATEX directive 94/9/EEC
EMC directive 2004/108/EEC

5 INSTALLATION

5.1 Conformity Check (Refer to Test Certificate provided with the sensor).

- Does the output signal of the sensor concur with the input requirement of the monitoring equipment being used?



- Is the correct supply voltage available for the sensor?

- Is the velocity operating range of the system within the stated measuring range of the sensor? (0...30 m/sec).

- Is the maximum static pressure of the system within the stated pressure rating of the sensor?

- Is the temperature variation range of the process medium within the stated temperature range of the sensor?

- Hazardous area classification?

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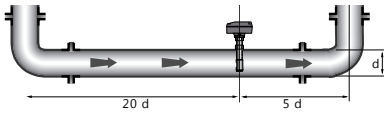
STANDARD OPTIONS AVAILABLE FOR INSERTION VORTEX GAS FLOW SENSORS

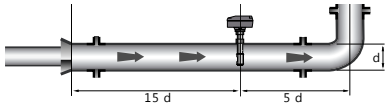
				OUTPUT SIGNAL		
TX5921	**VORTEX GAS FLOW SENSOR/TRANSMITTER** Rear Projecting Sensor.		Ex Group I	(01)	4...20 mA 0.4...2 V 5...15 Hz	(12) (11) (13)	• $1^1/_2$ " BSP Bush (22) • 50 mm ANSI Flange (21)
			Ex Group II	(02)	4...20 mA		
			General Purpose	(03)	4...20 mA		
TX5922	**VORTEX GAS FLOW SENSOR/TRANSMITTER** Side Projecting Sensor.		Ex Group I	(01)	4...20 mA 0.4...2 V 5...15 Hz	(12) (11) (13)	• Wall Mounting
			Ex Group II	(02)	4...20 mA		
			General Purpose	(03)	4...20 mA		
TX5923	**VORTEX GAS FLOW SENSOR/TRANSMITTER** Remote Sensor.		Ex Group I	(01)	4...20 mA 0.4...2 V 5...15 Hz	(12) (11) (13)	• $1^1/_2$ " BSP Bush (22) • 50 mm ANSI Flange (21)
			Ex Group II	(02)	4...20 mA		
			General Purpose	(03)	4...20 mA		

5 INSTALLATION continued

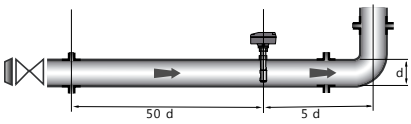
5.2 Fitting in Pipes and Ducts

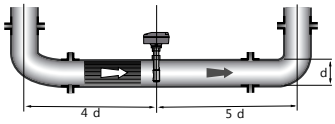


• To attain the best accuracy of response, select a position that is at least twenty pipe diameters down-stream from bends or
obstructions and approximately five pipe diameters from down-stream intrusions.

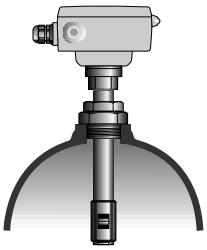


• Similarly, the sensor should be mounted at least fifteen pipe diameters from a pipe reducer and fifty pipe diameters from



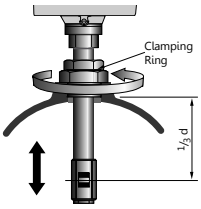


• If this is not possible then the installation of a standard flow straightener will improve performance.



• Fit a corresponding threaded boss or flange at the monitoring point and install the sensor, ensuring a gas tight

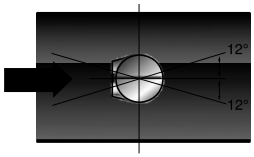
CHECK POINT **N.B.** High pressure versions, above 2 bar, will be supplied with a welded bush or flange and will require dedicated process fittings.



• Release the clamping ring on the mounting bush or flange.

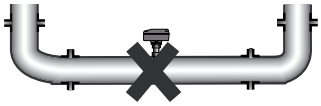
• The centre of the flow path of the sensing head should be

CAUTION Ensure that pressurised systems have been completely vented before installation or removal of the sensor.



• Position the sensing head with the smaller opening facing the flow, within a rotational deviation of nomore than 12° from the axis of flow.

• Tighten the clamping ring with moderate force.



• Avoid fitting the sensor at 'Low points' in pipework structures to prevent the sensing head from being affected by large accumulations of moisture

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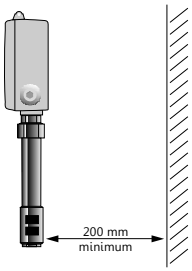
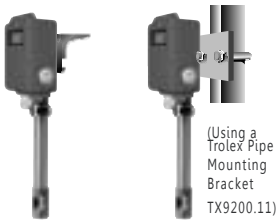
5 INSTALLATION continued

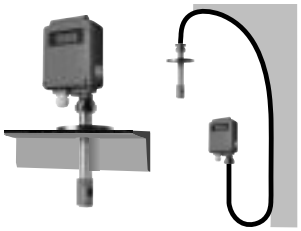
5.3 Fitting in Roadways & Tunnels (open area).



- To attain the best accuracy of response select a position away from adjacent structures and mount the sensor at least 200 mm



- Version TX5922 with a side projecting sensor can be mounted onto a suitable support using the mounting holes.



- Alternatively use a standard mounting bush or flange for fitting to a suitable bracket.

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5.4 Orientation of the Housing.

The housing of the sensor can be turned to any position about the axis of the sensing probe and locked in position for the preferred mounting attitude or cable routing access.

- Release the locking ring (CCW) as far as it will go.
- Rotate the sensing probe or the sensor housing to the desired position. (Rotation is limited to approximately 360° so do not force the limit stops).

5 INSTALLATION continued

5.5 Precautions.

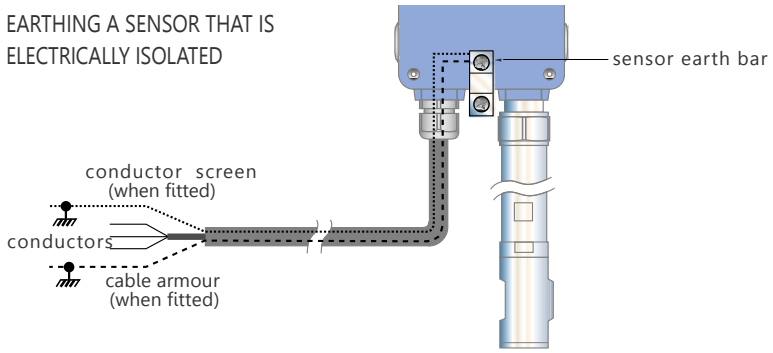
- Care should be taken, in the choice of installation, to ensure that vapour in the gas stream cannot condense onto the sensing head. This may cause an intermittent fault or temporary loss of signal.

  Operation can be restored by carefully cleaning the sensing head (Section 11.4).

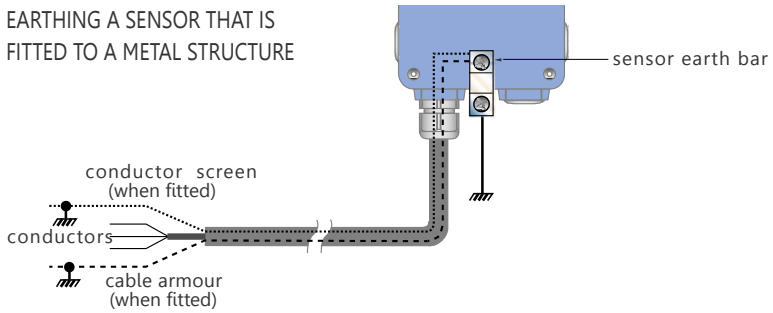
5.6 Earthing.

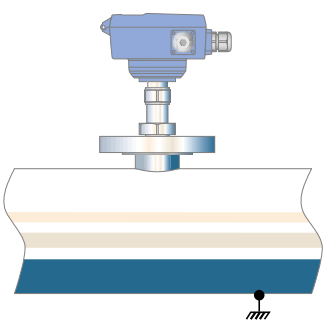
- Take care to ensure correct earthing procedures during installation. Because of its high response sensitivity, the TX5920 can be affected by earth borne electrical interference where associated metal structures have not been properly earthed.

- EARTHING A SENSOR THAT IS ELECTRICALLY ISOLATED



- EARTHING A SENSOR THAT IS FITTED TO A METAL STRUCTURE





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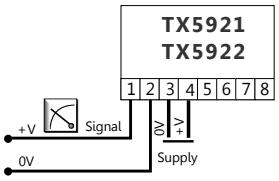
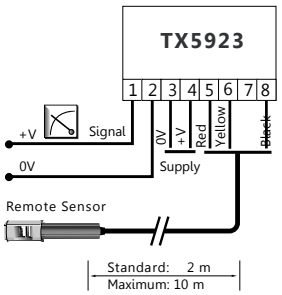
6 CONNECTIONS

INTEGRAL SENSOR



REMOTE SENSOR



CAUTION

Ensure that the process pipe or duct work is correctly earthed in accordance with local regulations. Inadequate earthing may adversely affect the operation of the sensor. Where the unit is installed in an electrically noisy environment, it may be necessary to bond the sensor metalwork to a local secure earthpoint (Section 5.6).

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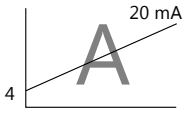
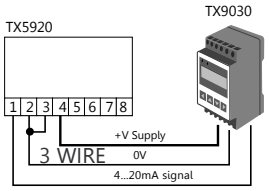
6.1 4...20 mA Output Signal.

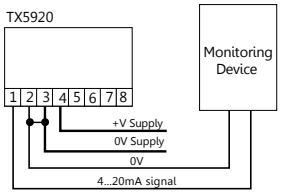


The output signal from terminals 1 and 2 is a conventional 4...20 mA current regulated signal loop.



Due to the power requirement of the processing stages of the sensor, a separate power supply feed is also required.

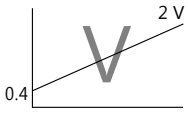
This can be sourced from the monitoring equipment



(eg. TX9031 Trip Amplifier or a TX9044 Programmable Sensor Controller) or from a separate power supply.

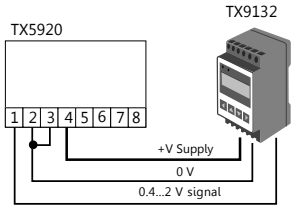
6 CONNECTIONS continued

6.2 0.4...2 V Output Signal.



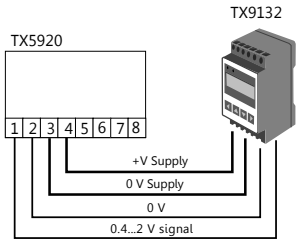
A low impedance two-wire voltage output signal requiring a separate power supply to the sensor. This can be derived from a Trip Amplifier or Programmable Sensor Controller, when one of those is used as the monitoring instrument.

This connection configuration works well up to about 100 metres distance between the sensor and the monitoring equipment.



3 WIRE

Both the signal and the power supply to the sensor are being carried in the common 0 V conductor so at some point – influenced by the length of the cable and the resistance of the cable cores – the current flowing in the 0 V conductor will impose an unacceptable voltage error onto the signal.



4 WIRE

This effect can be reduced on long distance connections by increasing the size of the cable cores, or even better, running a separate 0 V conductor to power the sensor.

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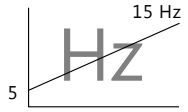
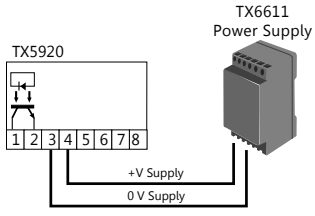
6.3 5...15 Hz Output Signal.



A square wave, frequency variable, output that is proportional to the measured value. The output device is an uncommitted NPN transistor.

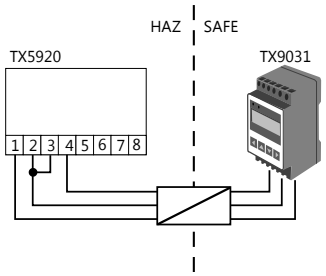


4 WIRE

Output:	5...15 Hz. (zero = 5 Hz). (span = 15 Hz).
Maximum Voltage:	15.4 V.
Maximum Current:	2 mA.
Min. Pulse Rise Time:	5 V/ms.

6 CONNECTIONS continued

6.4 Group II Hazardous Areas.



IMPORTANT

Ensure that the sensor is the

INTRINSICALLY SAFE version;

TX5921.02 / TX5922.02 / TX5923.02

All output signal options of the sensor are certified Intrinsically Safe for use in Group II hazardous areas, zones 0, 1 and 2, when used in conjunction with zener safety barriers or isolation safety barriers. Only the sensor may be mounted in the hazardous area.

Suggested Zener safety barrier:	MTL787s
Suggested safety isolator:	MTL5042

If you require any help in the use of safety barriers please contact Trolex Technical Department

ATEX

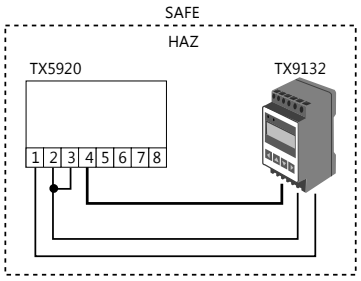
Ex ia

GROUP I M1

GROUP II 1G

INTRINSICALLY SAFE

6.4 Group I Hazardous Areas (Mining).



IMPORTANT

Ensure that the sensor is the

INTRINSICALLY SAFE version;

TX5921.01 / TX5922.01 / TX5923.01

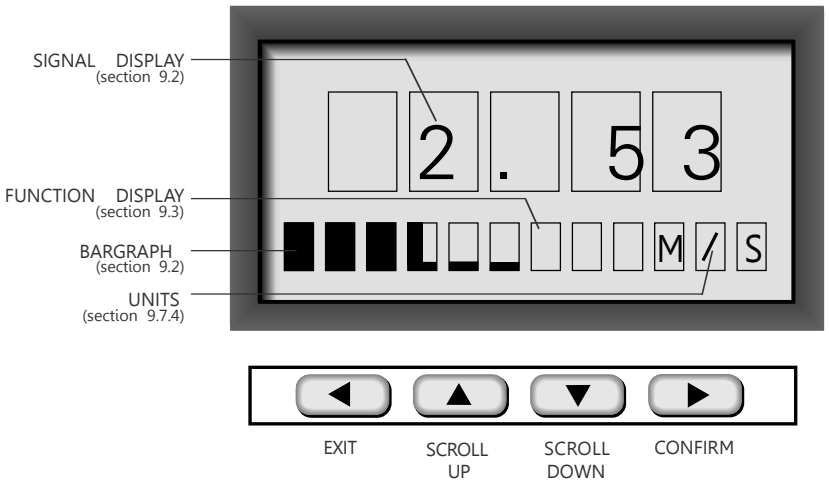
All output signal options of the sensor are certified Intrinsically Safe for the use in Group I hazardous areas (Mining) when used with approved equipment eg. TX9132 Trip Amplifier or a TX9042 Programmable Sensor Controller.

The complete system, both sensor and monitoring device can be mounted in the hazardous area.

7 CONNECTORS AND INDICATORS

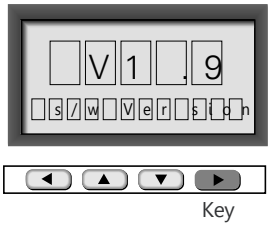
The programming and setting routines for the sensor have been designed for utmost simplicity and the programming system is completely menu driven. There is no special software programme and data input terminal and or PC is not required.

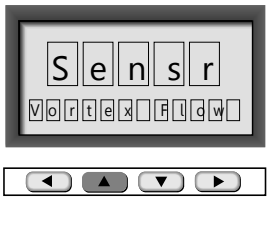
There are just four keys for controlling the complete operation and the digital display provides instructions throughout the programming process. All entries are verified in the display.



- Hold the SCROLL Keys down for two seconds for rapid self keying.
- All data settings are retained under power failure.

DATA REVIEW





ATEX
Ex ia
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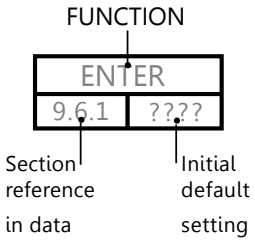
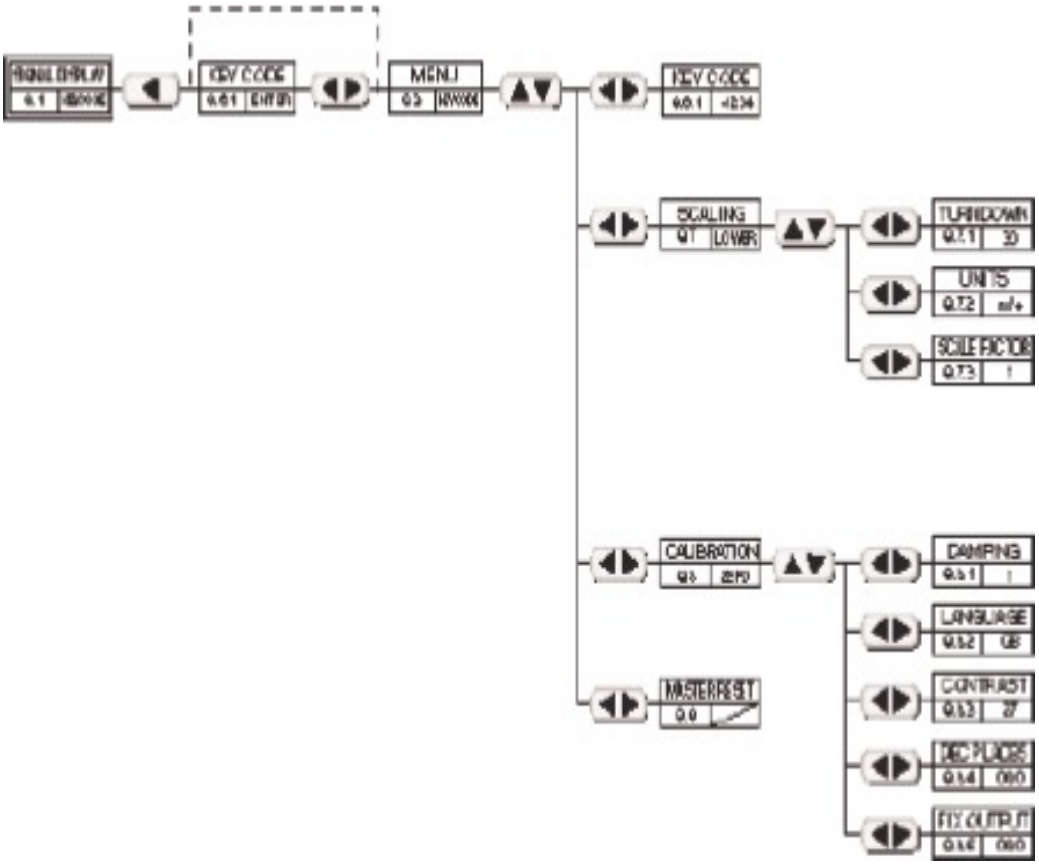
8 THE MENU OF FUNCTIONS





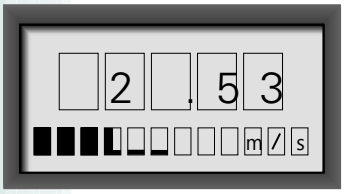
ATEX

Ex ia
GROUP I M1
GROUP II 1G
INTRINSICALLY SAFE

9 PROGRAMMING AND CALIBRATION

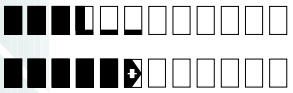
9.1 Switching On.

When switched on, the processor will initialise all the default values unless new values have previously been programmed.



9.2 Signal Display.

After two seconds, the display will switch to the SIGNAL DISPLAY mode, showing the measured signal value with the selected engineering units (m/s).



- The bargraph will also show a magnitude comparison of the input signal level.
- Signal over range.

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9.3 Entering the MENU.

All the operating functions of the sensor can be programmed by entering into the MAIN MENU.

Key ◄ to ENTER the main menu.

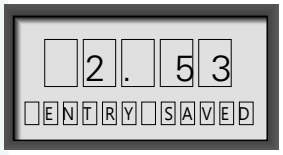
Key ▲ or ▼ to SCROLL up and down the MENU

Key ► to CONFIRM.

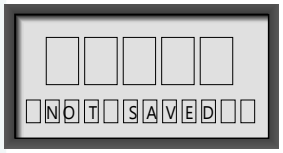
A request to enter a KEYCODE will appear if access is prevented.

Refer to Section 9.6

Previously programmed values will be shown in the main sectors of the display. Function changes can be programmed as described in the following sections.



- ENTRY SAVED will appear briefly whenever a new value is entered during programming.



- NOT SAVED will appear briefly if a value is not entered during programming.

9 PROGRAMMING AND CALIBRATION continued

9.4 Exit

Key ◄ to EXIT from any position in the MENU sequence.

Each operation of the key will revert the display one step back in the MENU table until the SIGNAL DISPLAY is reached.

9.5 Self Test

The processor will constantly carry-out a self-test routine of the main circuit elements; EPROM, memory, comms and display read/write function.
Any malfunction registered will be denoted by a FAIL message in the display.

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9.6 Keycode

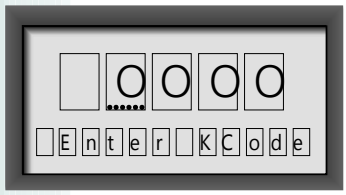
Enter a four digit security keycode to access the MAIN MENU.

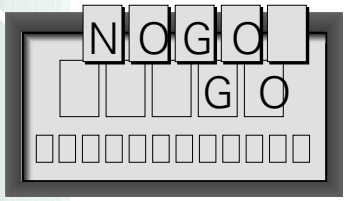
9.6.1 Enter Keycode

Key ▼ to TRAVERSE the cursor.

Key ▲ to INCREMENT the digit with the cursor under.

Key ► to CONFIRM.





GO or NO GO will appear briefly to confirm keycode status.

This request will not appear if the KEYCODE is not active. Refer to Section 9.6.2

9.6.2 Set Keycode

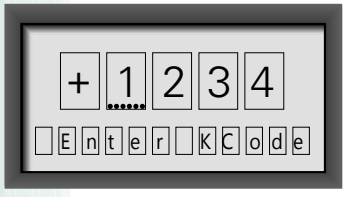
The keycode is a selectable option and the code can be changed at any time.

The keycode can also be set to be ACTIVE or NOT ACTIVE.

Key ▼ to TRAVERSE the cursor.

Key ▲ to INCREMENT the digit with the cursor under.

Key ► to CONFIRM.



− NOT ACTIVE (unrestricted access)

+ ACTIVE

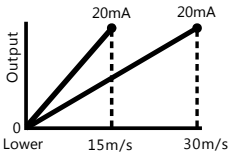
9 PROGRAMMING AND CALIBRATION continued

9.7 Scaling

The numerical values presented on the display can be programmed.

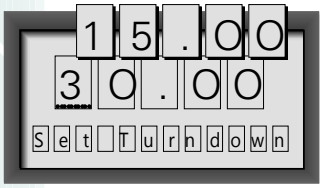
Key ▲ or ▼ to SELECT the function.

Key ▶ to CONFIRM.



9.7.1 Turndown

When the sensor is being used on a lower operating velocity range below the standard calibrated range of 0...30m/s (eg. 0...15m/s) the complete response range of the output signal can be utilised by 'Turning Down' the sensor response to the required maximum flow range of the system being monitored.



Adjustable Range: 5...30m/sec (16.4...98.43 ft/sec).

Key ▼ to TRAVERSE the cursor.

Key ▲ to INCREMENT the digit with the cursor under.

Key ▶ to CONFIRM.

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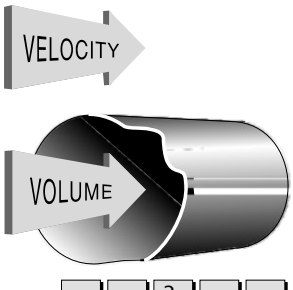
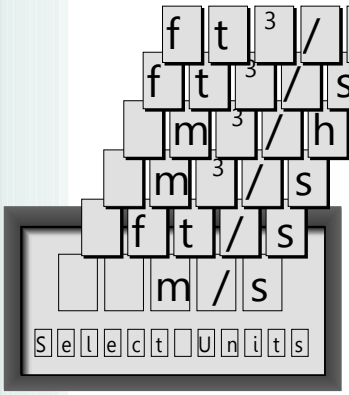
9.7.2 Units

There is a choice of six engineering units of flow:-

Flow velocity values independent of the cross-sectional area of the flow path.
1.m/s (metres per second).
2.ft/s (feet per second).

Volumetric flow values relative to the cross-sectional areas of the flow path.
3.m^3/s (cubic metres per second).
4.m^3/h (cubic metres per hour).
5.ft^3/s (cubic feet per second).
6.ft^3/h (cubic feet per hour).





- All display values will be automatically presented in the engineering units selected.
- If one of the VOLUMETRIC flow units (3 to 6) is selected, it will be necessary to enter an appropriate multiplication factor relating to the cross-sectional area of the flow path.

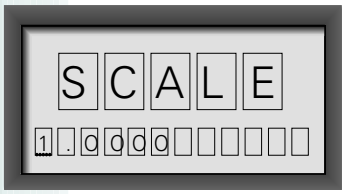
Refer to Section 9.7.3

Key ▲ or ▼ to SELECT the UNITS.

Key ▶ to CONFIRM.

9 PROGRAMMING AND CALIBRATION continued

9.7.3 Scale Factor



Range: 0...9 and D.P. (each digit)

If one of the four VOLUMETRIC flow units is selected, it will be necessary to enter a multiplication factor relating to the cross-sectional area of the flow path.

Refer to Section 9.7.2

Key ▼ to TRAVERSE the cursor.

Key ▲ to INCREMENT the digit with the cursor under.

Key ▶ to CONFIRM.

- The cross-sectional area factor MUST be entered in the same dimensional units.

Unit	Cross-sectional area
m^3/s	square metres (m^2)
m^3/h	square metres (m^2)
ft^3/s	square feet (ft^2)
ft^3/h	square feet (ft^2)

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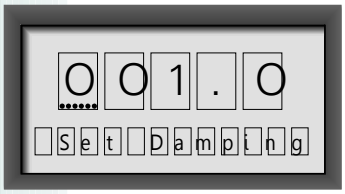
9.8 Calibration

The output signal parameters and operating functions can be programmed.

Key ▲ or ▼ to SCROLL the menu.

Key ▶ to CONFIRM.

9.8.1 Damping



Range: 0...999.9s

The immediacy of response of the sensor can be DAMPED to filter unwanted spurious changes in the process flow.

Key ▼ to TRAVERSE the cursor.

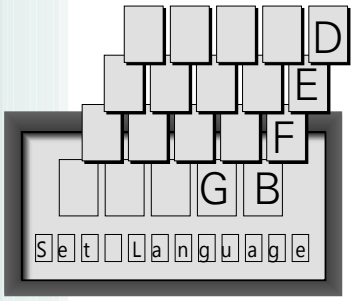
Key ▲ to INCREMENT the digit with the cursor under.

Key ▶ to CONFIRM.

The value entered approximates to the time taken in seconds for the signal to reach 63% of the final value (ie. one time constant).

9 PROGRAMMING AND CALIBRATION continued

9.8.2 Language



The display text can be shown in four different languages.

English (GB) French (F) Spanish (E) German (D)

Key ▲ or ▼ to SELECT.

Key ▶ to CONFIRM.

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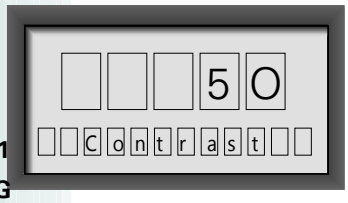
9.8.3 Contrast



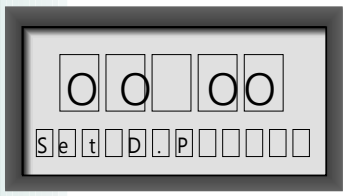
Range: 100 = Minimum Contrast
0 = Maximum Contrast

The contrast of the LCD can be varied to compensate for the effect of ambient temperature and light conditions.

Key ▲ or ▼ to SET the contrast.

Key ▶ to CONFIRM.

9.8.4 Decimal Places



Range: 0.000...00000

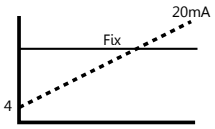
When the sensor is measuring a rapidly fluctuating signal, the fluttering minor digits in the display can be distracting. The position of the decimal point can be moved to any position in the figure to minimise this effect.

Key ▲ or ▼ to TRAVERSE the decimal point.

Key ▶ to CONFIRM.

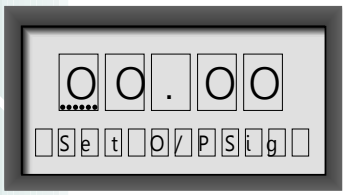
9 PROGRAMMING AND CALIBRATION continued

9.8.5 Fix Output



It may be necessary, from time to time, to temporarily shut down the process to carry out maintenance or servicing which will probably mean stopping the flow.

To prevent an alarm condition being transmitted by the sensor, the output signal can be temporarily FIXED at any desired PERCENTAGE value of the output signal range.
The FIXED LEVEL selected is a calibrated value so this feature can also be used to test the integrity of the signal loop and any remote monitoring equipment, by simulating an output signal of defined value. Remote display systems can be calibrated and any alarm set point levels can be checked for function and accuracy.



Range: 0...99.99%

Key ▼ to TRAVERSE the cursor.

Key ▲ to INCREMENT the value of the digit with the cursor under.

Key ▶ to CONFIRM.

The signal will be RELEASED when the MENU position is vacated.

ATEX

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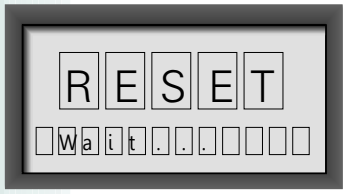
GROUP I M1
GROUP II 1G
INTRINSICALLY SAFE

9.9 Master Reset

All data will be re-initialised as if the power had been removed. All user settings will be retained.

Refer to Section 8

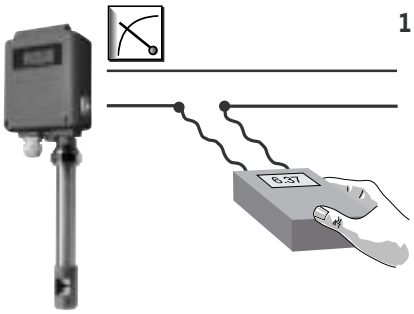


Key ▶ to RESET.

The display will return to the SIGNAL DISPLAY mode.

10 MAINTENANCE continued

There are no degradable components, but it is good safety practice to carry out regular preventative maintenance to confirm correct operation.



10.1 Output Signal

Check at regular intervals, that the value of the output signal agrees with the value of the display reading.

Refer to Section 9.8

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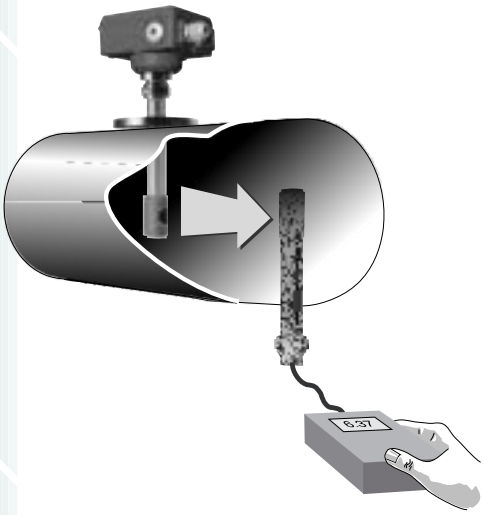


10.2 Sensing Probe

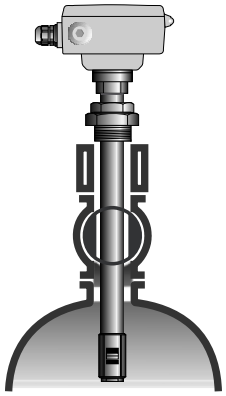
Under normal circumstances, the calibration of the actual sensing probe will not change by any significant degree.

Check the accuracy at least once per year by comparing the display reading with an accurately measured value of flow velocity.

Alternatively the sensor can be returned to our Product Support Department for checking and calibration.

10.3 Cleaning the Sensing Probe

Remove the sensor at regular intervals to assess its condition. Clean the sensing head with a soft brush or cloth if necessary. Do not use sharp tools as this may cause damage to the ultrasound transducers and the transverse strut.



10.4 Hot Tap Mounting

Where the process cannot be interrupted to remove the sensor from a pipeline, an isolating ball valve may be fitted to the process connection at the installation stage.

11 APPROVALS AND CERTIFICATION

11.1 Europe (ATEX)

Ex Certificate number: Sira 99ATEX2135X

Ex Certification code: I M1 Ex ia I Ma (-20°C ≤ Ta ≤ +60°C)

II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +60°C)

Specific Conditions of Use:

The only sensor that may be used with the TX5923 (remote sensor head version) is that provided by Trolex. The maximum length of cable allowed is 10 m.

The user should ensure that the equipment is not installed in a location where it may be subject to external conditions (such as high-pressure steam) which might cause a build-up of static on non-conducting surfaces (polycarbonate window). Additionally cleaning of the equipment should only be done with a damp cloth.

General Conditions of Use:

Prior to installation, it is essential that user refers to the above certificate to ensure that the termination and cable parameters are fully complied with and are compatible with the application. Copies of certificates are available from Trolex.

ATEX Directive (94/9/EC)

EMC Directive (2004/108/EC)

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INTRINSICALLY SAFE

11.2 Australia (ANZEx)

Ex Certificate number: ANZEx 12.3003X

Ex Certification Code: Ex ia I (-20°C ≤ Ta ≤ +60°C)

Ex ia IIC T4 (-20°C ≤ Ta ≤ +60°C)

Conditions of Certification:

Prior to installation, it is essential that the user refers to the above certificate to ensure that the termination and cable parameters are fully complied with and are compatible with the application. Copies of certificates are available from Trolex.

The user should ensure that the equipment is not installed in a location where it may be subject to external conditions (such as high-pressure steam) which might cause a build-up of static on non-conducting surfaces (polycarbonate window). Additionally cleaning of the equipment should only be done with a damp cloth.

11 APPROVALS AND CERTIFICATION continued

11.3 Russia (GOST-R)

Ex certificate number: POCC GB.ME92.B02878

Ex Certification codes: PO Ex ia I X

0 Ex ia IIC T4 X

Conditions of Use:

Prior to installation, it is essential that user refers to the above certificate for any specific conditions of use. The user must ensure that the termination and cable parameters are fully complied with and are compatible with the application. Copies of certificates are available from Trolex.

11.4 South Africa

Ex certificate number: MASC MS/13-188X

Ex certification codes: Ex ia I (-20°C ≤ Ta ≤ +60°C)

Ex ia IIC T4 (-20°C ≤ Ta ≤ +60°C)

Special Conditions of Use:

Prior to installation, it is essential that the user refers to the above certificate to ensure that the termination and cable parameters are fully complied with and are compatible with the application. Copies of certificates are available from Trolex.

The user should ensure that the equipment is not installed in a location where it may be subject to external conditions (such as high-pressure steam) which might cause a build-up of static on non-conducting surfaces (polycarbonate window). Additionally cleaning of the equipment should only be done with a damp cloth.

General Conditions of Use:

Prior to installation, it is essential that user refers to the above certificate to ensure that the termination and cable parameters are fully complied with and are compatible with the application. Copies of certificates are available from Trolex.

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GROUP I M1
GROUP II 1G
INTRINSICALLY SAFE

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