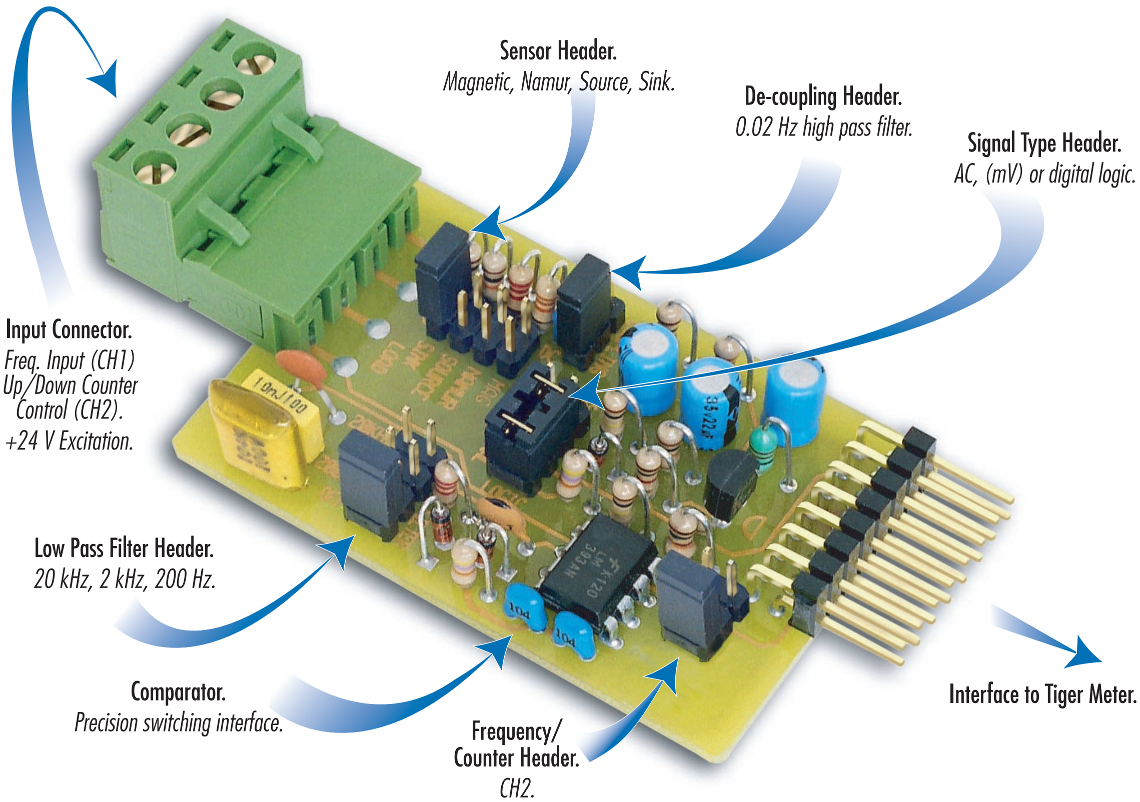
Fits Tiger 320 Series

UNIVERSAL FREQ/COUNTER INPUT MODULE



Your first choice frequency/rpm/counter input module.

Combined with the Tiger 320 Series operating system, the IF10 universal frequency/counter input module is the quick-fix interface to time varying signals. You now have a versatile and powerful monitoring and control system to perform tasks such as totalizing counts, frequency measurements, or status monitoring. Should your transducer be a magnetic pick-up outputting small AC volts or an open-collector transistor switching voltage levels, the IF10 is easily connected with a selection of configuration headers providing a variety of interface options.

Input Module
Order Code Suffix

IF10

Hardware Module Specifications

Signal Input	0-24 V DC, 0-30 V AC. CH1 frequency or UP counter. CH2 frequency or UP / DOWN counter.
Low-pass Filter Header	None, 200 Hz, 2 kHz, 20 kHz cut off frequency.
De-coupling Header	DC component removed by 0.02 Hz high-pass filter.
Sensor Header	Optional sink / source for digital transistor or switch interface; specific Namur 2-wire proximity detector option; magnetic pick-up (AC) choice.
Signal Type Header	Choice of DC (logic) or AC signal type.
Frequency/Counter Header	CH2 function select.
Frequency Response	Set by Tiger meter configuration software. Can be as fast as 200 kHz on CH1 or CH2.
Excitation Voltage	24 V DC (50 mA) to power external transducers.
CH2 UP/DOWN Control	DOWN counter: Connect Pin 3 & Pin 4. UP counter: Leave Pin 3 OPEN when frequency/ counter header is set to counter.

Connector Pinouts & Module Layout

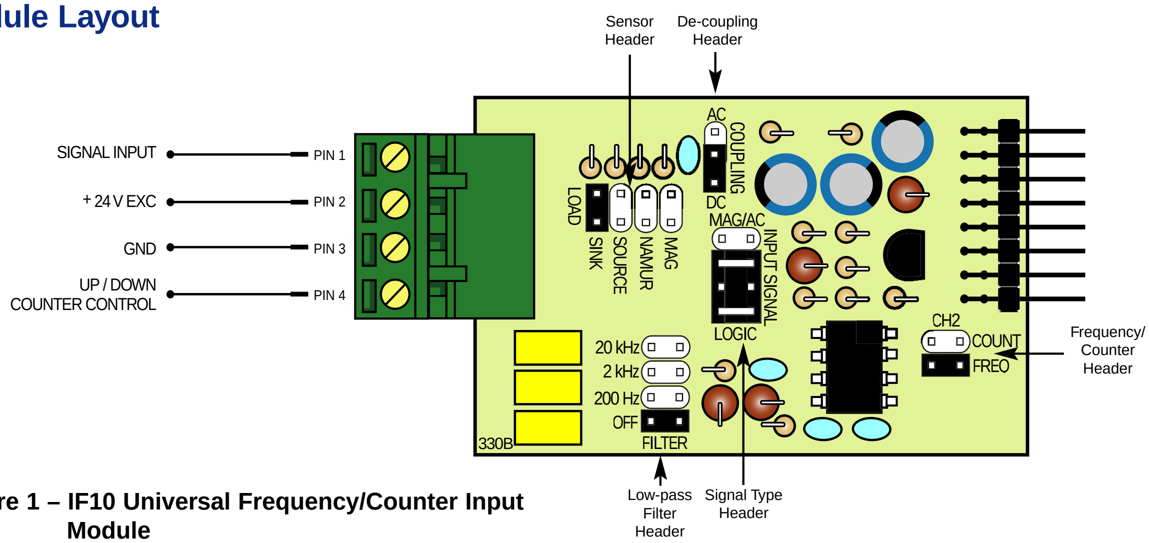


Figure 1 – IF10 Universal Frequency/Counter Input Module

Detailed Description

The Tiger 320 Series controller has four input channels capable of processing almost any input signal type. The IF10 universal frequency/counter input module uses only channels 1 (CH1) and 2 (CH2).

The IF10 input module receives and conditions an AC volts or digital input signal, via pin 1, and supplies a frequency input to CH1 and CH2 in the meter for further processing. CH1 can also be configured as an UP counter via software selection in Code 2 of the meter's programming software. CH2 can be configured as an UP or DOWN counter. The UP/DOWN counter control signal for CH2 is connected to pin 4. With the frequency/counter selection header set to the COUNT position, the input module provides an UP counter output to the meter for further processing. To provide a DOWN counter, pin 4 must be connected to ground (pin 3).

Selectable on-board headers provide configuration settings allowing the sensor and signal type to be selected along with high and low-pass filtering. These selectable headers give the Tiger 320 Series the flexibility to perform dual software operations such as rate of change on CH1 and totalizing on CH2.

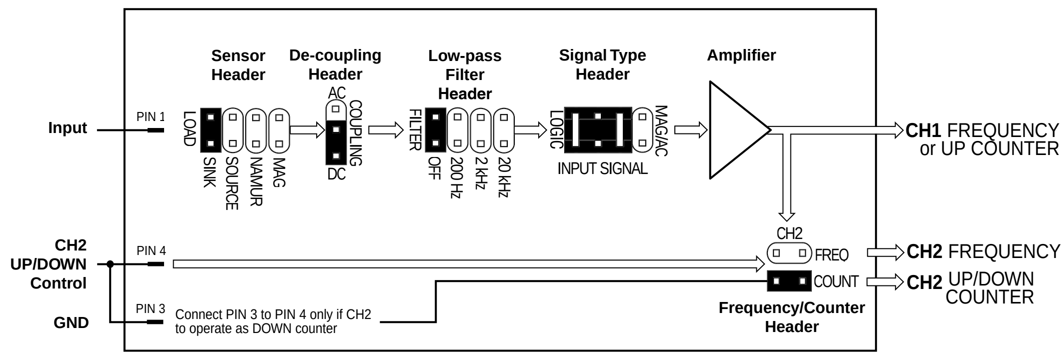


Figure 2 – IF10 Universal Frequency/Counter Input Module Signal Flow Diagram

Tiger 320 Series Meter Settings

Frequency and counter settings are configured in Codes 2 and 4 of the Tiger 320 Series meter's main programming mode. Channel 1 frequency settings are configured in Code 2. Channel 2 frequency and counter settings are configured in Code 4.

CH1 → **FREQUENCY or UP COUNTER**

→ **CODE 2** → **[X4X]**

1st Digit: X Select analog sample and output rate as required.

2nd Digit: 4 Selects **Frequency**.

3rd Digit: X Select the Frequency Range from the following settings:

FREQUENCY RANGE SELECTION	
0	**99.999 Hz range from 0.010 Hz**
1	99.999 Hz range from 2.000 Hz
2	999.99 Hz range from 0.01 Hz
3	999.99 Hz range from 2.00 Hz
4	9999.9 Hz range from 0.1 Hz
5	9999.9 Hz range from 2.0 Hz
6	99 kHz range from 1 Hz (1 s gate)
7	655.35 kHz range from 10 Hz (0.1 s gate)

→ **[X6X]**

1st Digit: X Select analog sample and output rate as required.

2nd Digit: 6 Selects **UP Counter**.

3rd Digit: X Select Counter from the following settings:

UP COUNTER SELECTION	
0	**Counter input with 16-bit Pre-scaler**
1	Setting of 16-bit Pre-scaler
2	Debounced Counter with Pre-scaler

PrE_S 1

Use ⇧ ⇩ buttons to set prescale values

X61 Sets Prescaler	
1 =	0.1 second
10 =	1 second
600 =	1 minute
3600 =	1 Hour***

****Note:*
For the 1 hour setting, the scale factor for CH1 must be set to 0.1 in the calibration mode setting [111].

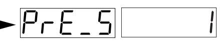
CH2 → FREQUENCY or COUNTER → CODE 4 → [X4X]

1st Digit: 3 Selects second digital input channel.

2nd Digit: X Select required **Frequency** or **Counter** setting.

DIGITAL INPUT	
0	**Frequency - 99.999 Hz range from 0.001 Hz**
1	Frequency - 999.99 Hz range from 0.01 Hz
2	Frequency - 99.999 kHz range from 1 Hz (1 s gate)
3	Frequency - 500 kHz range from 10 Hz (0.1 s gate)
4	Period - 9.9999 s (100 µs resolution)
5	Period - 999.99 ms (10 µs resolution)
6	Up/Down Counter with Prescaler
7	Set Prescaler

3rd Digit: 0 Set to 0.



Use ⇧ ⇩ buttons to set prescale values from 1 to 32767 counts

Interface Configuration Examples

The following example diagrams show the various header settings and input connections required for a range of input sensor types.

Example 1 – NPN Open-collector Output with Proximity Switch

Figure 3 shows a 3-wire proximity switch taking +24 V excitation from the meter with an NPN open-collector signal output connected to the input module as frequency with no filtering (CH1 and CH2).

The input header is set to SINK connecting the signal output to +24 V via an on-board 10 k pull-up resistor. As the proximity switch is activated, the signal is forced to ground.

Header Note:

- ***Sensor Header set to SINK.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to LOGIC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to FREQ.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

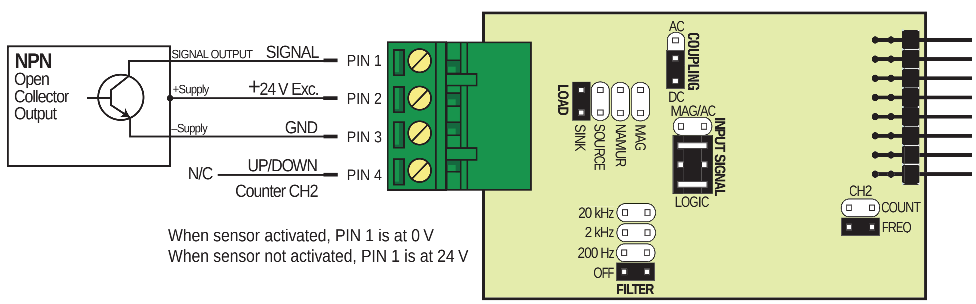


Figure 3 – 3-wire Proximity Switch with NPN Open-collector Output

Example 2 – PNP Open-collector Output with Proximity Switch

Figure 4 shows a 3-wire proximity switch taking +24 V excitation from the meter with a PNP open-collector signal output connected to the input module as frequency with no low-pass filtering (CH1 and CH2).

The input header is set to SOURCE connecting the input signal to a 10 k pull-down resistor to ground. When the proximity switch is activated, the input signal switches from 0 V to +24 V.

Header Note:

- ***Sensor Header set to SOURCE.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to LOGIC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to FREQ.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

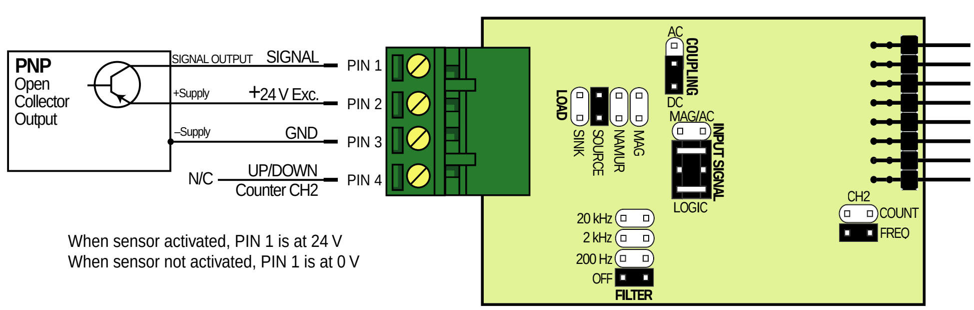


Figure 4 – 3-wire Proximity Switch with PNP Open-collector Output

Example 3 – Hall Effect / Magnetic Pickup – mV Input

Figure 5 shows a magnetic pickup. With small AC signals a shielded cable should be used to avoid stray pickup.

Header Note:
- ***Sensor Header set to MAG.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to MAG/AC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to FREQ.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

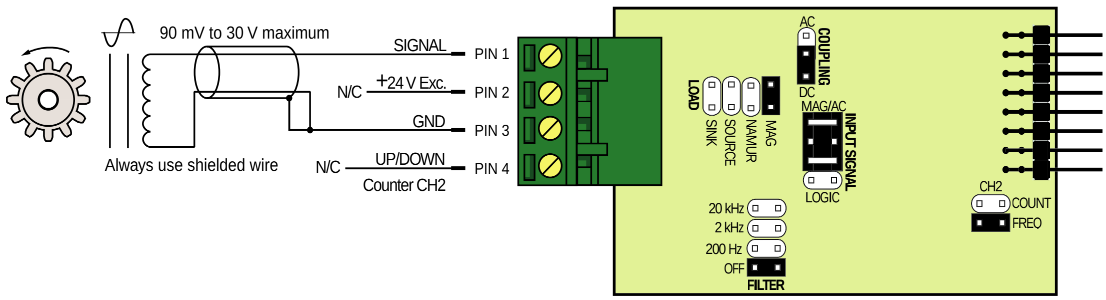


Figure 5 – HAll Effect / Magnetic Pickup – mV Input

Example 4 – TTL Input

Figure 6 shows a TTL input. The TTL input requires the sensor header to be placed in the SINK position. In this example the TTL logic has a separate +5 V supply. The input module is configured as a DOWN counter on CH2 and a frequency input on CH1. This requires pin 4 connected to ground (pin 3) to select the DOWN counter option and the frequency/counter header set to COUNT. The digital option (LOGIC) is selected on the signal type header.

Header Note:
- ***Sensor Header set to SINK.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to LOGIC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to COUNT.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

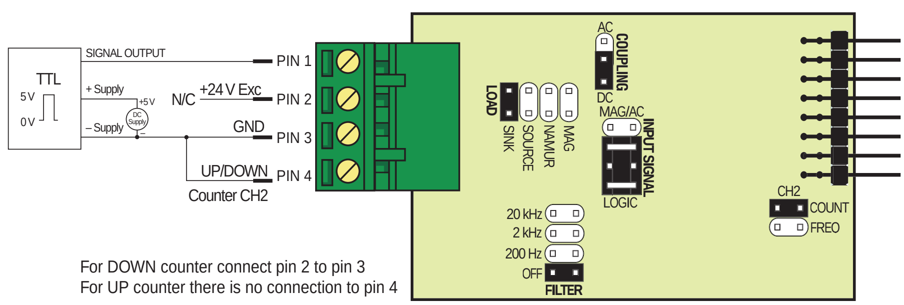


Figure 6 – TTL Input

Example 5 – Digital Input with DC Voltage Offset

Figure 7 shows a digital input with voltage offset. In this situation the DC component of the signal is removed by selecting the AC option on the decoupling header. The digital input has its own supply voltage. CH1 reads frequency. CH2 is set as an UP counter.

Header Note:
- ***Sensor Header set to SINK.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to MAG/AC.***
- ***De-coupling Header set to AC.***
- ***FREQ/COUNT Header set to COUNT.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

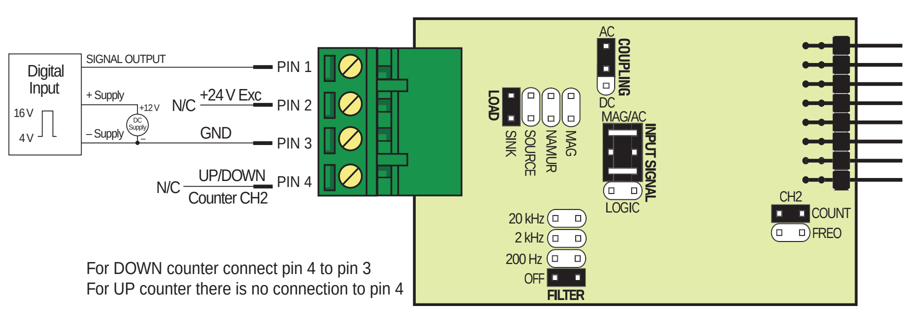


Figure 7 – Digital Input with DC Component

Example 6 – Pushbutton Switch with Frequency & UP Counter Option

Figure 8 shows a pushbutton switch with frequency on CH1 and the UP counter option on CH2. The low-pass filter header is set to 200 Hz to debounce mechanical contacts. Sensor type is set to SINK to pull-up the input signal to +24 V until it is switched to ground when the pushbutton is pressed.

Header Note:
- ***Sensor Header set to SINK.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to LOGIC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to FREQ.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

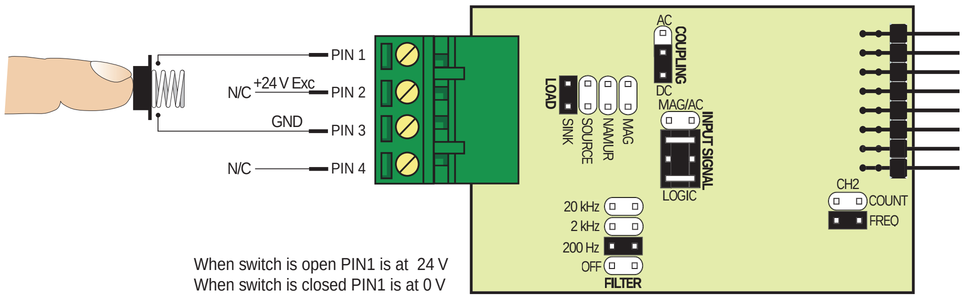


Figure 8 – Pushbutton Switch with Frequency & UP Counter

Example 7 – NAMUR Sensor

Figure 9 shows a NAMUR 2-wire proximity detector as an UP counter on CH2. Set the sensor header to NAMUR to ensure the detector has the correct output load (2 kΩ pull-down resistor) and to protect the sensor at +24 V excitation voltage. The current output of these detectors vary in response to the proximity of the target metal.

Header Note:
- ***Sensor Header set to NAMUR.***
- ***Low-pass Filter Header set to OFF.***
- ***Signal Type Header set to LOGIC.***
- ***De-coupling Header set to DC.***
- ***FREQ/COUNT Header set to FREQ.***

Header Note:
If the signal is noisy, select the 2 kHz or 200 Hz low-pass filter setting on the low-pass filter header.

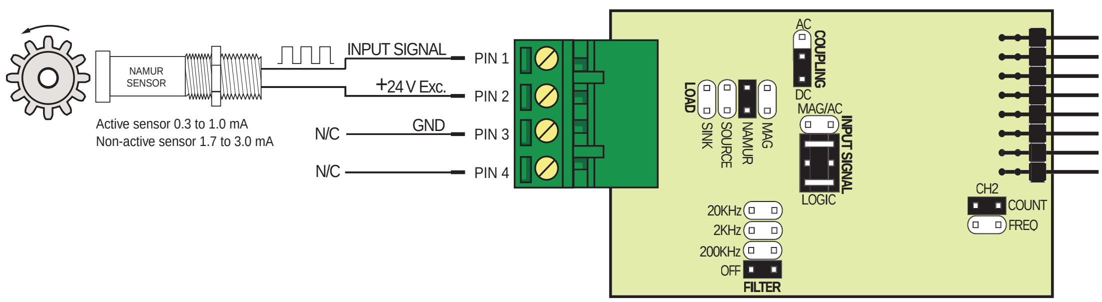


Figure 9 – NAMUR Sensor

Converting K Factor to Scale Factor for Manual Calibration

One method of calibrating the IF10 input module is to use a frequency generator to apply a low and high input, while setting zero and span settings via the two-point calibration mode. Unfortunately, a frequency generator is not always available to a user in the field and, therefore, manual calibration needs to be carried out by changing the controller's scale factor.

Flow sensors such as paddlewheel and turbine types generate a known number of pulses for each unit of volume of fluid passing the rotor blade. This constant is known as the **K factor** and is used to determine the flow rate or total flow from the number of pulses occurring per second.

To calibrate the IF10 input module in applications using pulse, flow, and proximity sensors, the manufacturer provides either the K factor specified for the sensor, or a pulses per engineering unit chart (liters, gallons, feet, inches, meters, millimeters, revolution). From this information, The K factor can be easily converted to a **scale factor** and the scale factor manually entered into the controller.

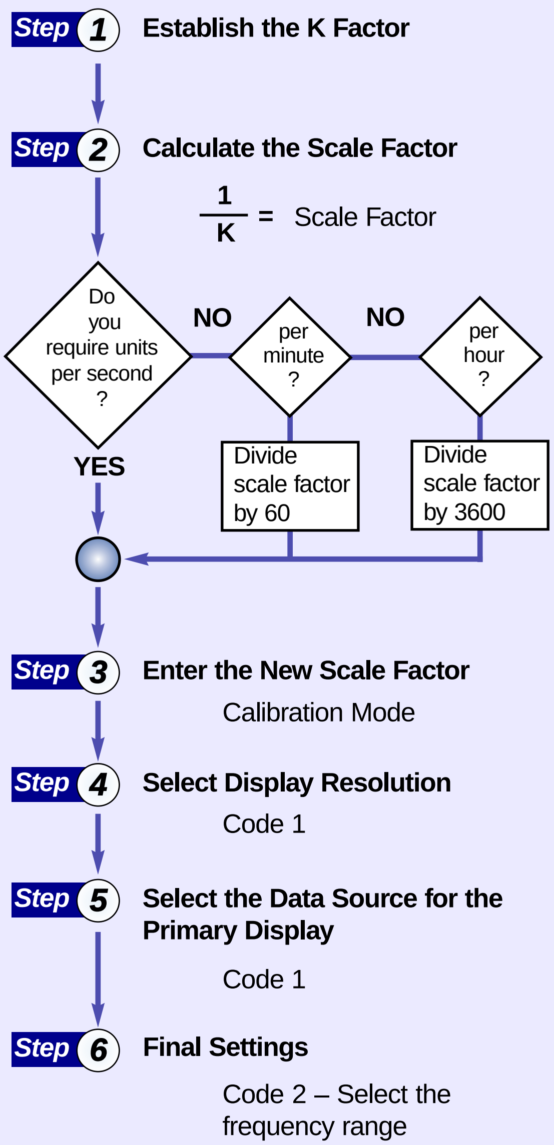
Depending on the channel used and the type of input signal, follow the sequence of steps in one of the following manual calibration procedure sequence charts:

- Channel 1:
  - As a frequency signal to the controller.
  - As an UP counter.
- Channel 2:
  - As a frequency signal to the controller.
  - As an UP or DOWN counter.

Channel 1

Frequency Input

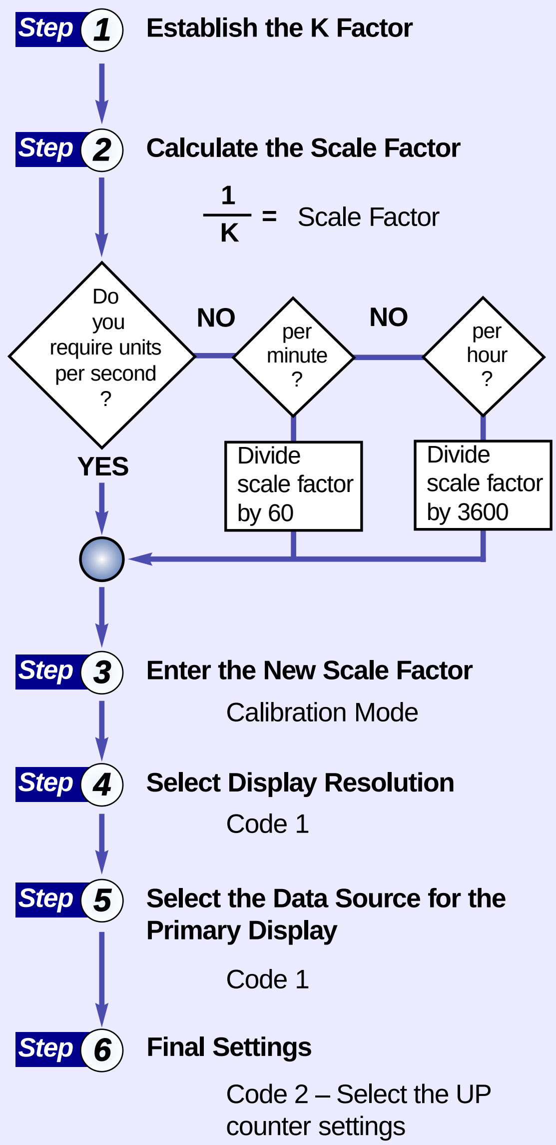
As a **frequency** input to the meter, a different scale factor can be used in CH1 to suit the required engineering units. To calculate and set a new scale factor, carry out the manual calibration procedure in the following sequence:



Channel 1

UP Counter

As with CH1 set to frequency, a different scale factor can be used in CH1 to suit the required engineering units. The configuration procedure is identical for the first five steps, but in Step 6 the **frequency** input signal can be selected in software as an UP counter. To calculate and set a new scale factor, carry out the manual calibration procedure in the following sequence:



Channel 1: Frequency Input

Step 1 – Establish the K Factor

The manufacturer of the sensor normally provides either the K factor specified for the sensor, or a pulses per engineering unit chart, shown in pulses per liter, gallon, feet, inch, meter, millimeter, or revolution. Either way the K factor is the same:

A K factor of 250 is the same as 250 pulses/unit for a specified sensor application

Step 2 – Calculate the Scale Factor

From the K factor, the scale factor can be calculated by dividing K into unity.

For example:

A paddlewheel sensor generates **213** pulses per gallon of fluid passing the rotor.

If K = 213 (213 pulses/gallon)

Then $\frac{1}{K}$ = **0.0047** gallons/pulse = the scale factor

The resultant scale factor is then entered into the controller in the calibration mode.

The controller receives the input signal from the sensor as pulses and treats them as a frequency measurement task. The final controller display is in units of frequency, i.e. hertz, but equivalent to the flow rate scaled to the appropriate engineering units, for example: **gallons/second**.

OR

A rotary encoder placed on a milling table generates **500** pulses per foot of travel.

Therefore, if K = 500 (500 pulses/foot)

Then $\frac{1}{K}$ OR $\frac{1}{500}$ = **0.002** feet/pulse = the scale factor

Again, the resultant scale factor is then entered into the controller in the calibration mode. The controller receives the input signal from the sensor as pulses and treats them as a frequency measurement task. The final controller display is in units of frequency, i.e. hertz, but equivalent to the feed rate scaled to the appropriate engineering units, for example: **feet/second**.

Note:
If you require units per minute divide the scale factor by 60.
If you require units per hour divide the scale factor by 3600.

Step 3 – Enter the New Scale Factor

When you have established the new scale factor, enter the controller's calibration mode [CAL] and set to [10X]. The X in the 3rd digit means you must select the relevant channel for the input signal. Enter this mode and set the offset setting [OFF_1] to 0 and the scale setting [SCA_1] to the new scale factor.

Enter Calibration Mode [CAL] [10X]

then [OFF_1] Leave as [0.0]

[SCA_1] [1.0000]

Reset to new **scale factor**. For example: [0.0047]

Step 4 – Select Display Resolution

At this point you should decide on where you want to position the decimal point on the display, based on the minimum and maximum displayed units you require, then set this in Code 1 [X61].

Enter Code 1 [Cod_1] [X61] 3rd digit selects **channel 1**

then [diSP] [000] 3rd digit selects **decimal point** position

5-Digit Display		6 or 8-Digit Display
XXXXX	**No decimal point**	**XXXXXX**
	Clock only	XX.XX.XX
	One Hundred Thousandths	X.XXXXX
X.XXXX	Ten Thousandths	XX.XXXX
XX.XXX	Thousandths	XXX.XXX
XXX.XX	Hundreds	XXXX.XX
XXXX.X	Tenths	XXXXX.X

Least Significant Digit

THIRD DIGIT DECIMAL POINT PLACEMENT	
0	**No decimal point**
1	XX.XX.XX (6 or 8-digit version only)
2	X.XXXXX (6 or 8-digit version only)
3	X.XXXX
4	X.XXX
5	X.XX
6	X.X
7	Decimal Point set from the rear of the meter (X.XXXXX to XXXXXX)

Step 5 – Select the Data Source for the Primary Display

While leaving Code 1 after setting the position of the decimal point, set the 2nd digit to 5 and the 3rd digit to 0 to select the **primary display** [Cod_1] [X50].

The source for the primary display is set by selecting 0 in the 3rd digit and then entering the **select data source** mode. In this mode a number of choices are available as the source of data for the selected (primary) display.

Enter Code 1	Cod_1	X50	3rd digit 0 selects primary display.
then	SourC	oFF	Select the **channel** required as the source for the primary display.

Note:
The primary display is the default display for all single display Tiger 320 Series controllers (i.e. selecting 0, 1, or 2 in the 3rd digit selects the primary display). In dual and triple display controllers, the top display is the primary display. And in bargraphs the digital display is the primary display and the bargraph is the secondary display.

Step 6 – Final Settings: Frequency Input

The display frequency range is selected last and completes the manual calibration procedures for CH1 setup as a frequency input. After you have decided on the resolution you require, and positioned the decimal point to provide this, the frequency range then configures the position of the displayed counts when a 1 Hz pulsed input is applied.

Enter Code 2 and select 4 in the 2nd digit. In the 3rd digit select the frequency range that applies.

Enter Code 2	Cod_2	X4X	3rd digit selects the **frequency range** for the display

SECOND DIGIT	
MEASUREMENT TASK	
0	Voltage, Current
1	TC (3rd digit selects type of TC)
2	RTD/Resistance 3-wire (3rd digit selects type of RTD)
3	RTD/Resistance 2- or 4-wire (3rd digit selects type of RTD)
4	**Frequency** →
5	Period
6	Counter
7	Smart Input Module

THIRD DIGIT	
FREQUENCY RANGE SELECTION	
0	**From 0.010 Hz to 99.999 Hz**
1	From 2.000 Hz to 99.999 Hz
2	From 0.01 Hz to 999.99 Hz
3	From 2.00 Hz to 999.99 Hz
4	From 0.1 Hz to 9999.9 Hz
5	From 2.0 Hz to 9999.9 Hz range
6	From 1 Hz to 99 kHz (1 s gate)
7	From 10 Hz to 655.35 kHz (0.1 s gate)

Displayed Counts

X40	For 1 Hz	1.000	For 50 Hz	50.000
X41	For 1 Hz	1.000	For 50 Hz	50.000
X42	For 1 Hz	1.00	For 50 Hz	50.00
X43	For 1 Hz	1.00	For 50 Hz	50.00
X44	For 1 Hz	1.0	For 50 Hz	50.0
X45	For 1 Hz	1.0	For 50 Hz	50.0
X46	For 1 Hz	1.	For 50 Hz	50.
X47	For 1 Hz	0.1	For 50 Hz	5

Step 6 – Final Settings: UP Counter

To complete the manual calibration procedures, CH1 must be configured as an UP counter. Enter Code 2 and select 6 in the 2nd digit. This selects counter as the measurement task. In the 3rd digit select 3 to apply the UP counter.

Enter Code 2 Cod_2 X63

SECOND DIGIT MEASUREMENT TASK	
0	Voltage, Current
1	TC (3rd digit selects type of TC)
2	RTD/Resistance 3-wire (3rd digit selects type of RTD)
3	RTD/Resistance 2- or 4-wire (3rd digit selects type of RTD)
4	Frequency
5	Period
6	**Counter**
7	Smart Input Module

THIRD DIGIT COUNTER	
0	**Counter input with 16-bit Pre-scaler**
1	Setting of 16-bit Pre-scaler
2	Debounced Counter with Pre-scaler
3	**Up/Down Counter with Pre-scaler**
4	0.1 sec Timer with Pre-scaler
5	–
6	External 24-hour clock
7	Internal 24-hour clock

Channel 2

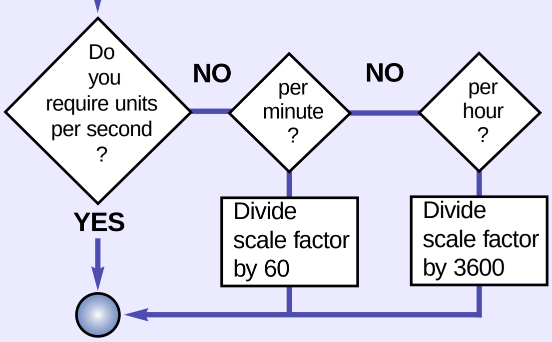
Flow Rate – Header in FREQ Position

As a **frequency** input, a different scale factor can be used in CH2 to suit the required engineering units. To calculate and set a new scale factor, carry out the manual calibration procedure in the following sequence:

Step 1 Establish the K Factor

Step 2 Calculate the Scale Factor

$$\frac{1}{K} = \text{Scale Factor}$$



Step 3 Enter the New Scale Factor

Calibration Mode

Step 4 Select Display Resolution

Code 1

Step 5 Select the Data Source for the Primary Display

Code 1

Step 6 Select the Display Range

Code 4

Channel 2

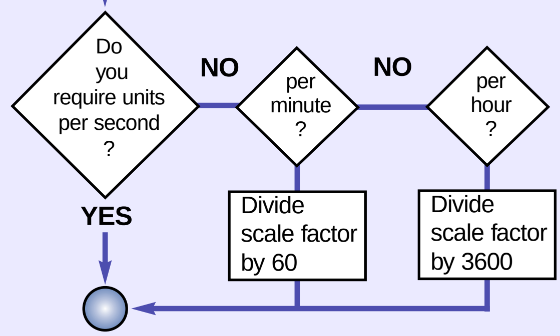
Totalizer – Header in COUNT Position

As a **counter** input, CH2 can be programmed as a totalizer using the prescaler. To calculate the prescaler, carry out the manual calibration procedure in the following sequence:

Step 1 Establish the K Factor

Step 2 Calculate the Scale Factor

$$\frac{1}{K} = \text{Scale Factor}$$



Step 3 Enter the New Scale Factor

Calibration Mode

Step 4 Make Sure the Prescaler is Set to 1

Code 4

Step 5 Select the UP/DOWN Counter

Code 1

Step 6 Select Display Resolution

Code 1

Step 7 Select the Data Source for the Primary Display

Code 1

Step 8 If required:

Select a New Display Message for the CH2 Display in the View Mode

Texmate Meter Configuration Utility Program

Channel 2: Flow Rate – Header in FREQ Position

Step 1 to Step 5

Steps 1 to 5 are the same for CH1 – Frequency Input and CH2 – Flow Rate. Follow Steps 1 to 5 under the heading **Channel 1 – Frequency Input** when carrying out channel 2 flow rate manual calibration procedures.

Step 6 – Select the Display Frequency Range

The display frequency range is selected last and completes the manual calibration procedures. After you have decided on the resolution you require, and positioned the decimal point to provide this, the frequency range then configures the position of the displayed counts when a 1 Hz pulsed input is applied.

Enter Code 4 and select 3 in the 1st digit to select the second digital input channel. In the 2nd digit select the frequency range that applies. Select 0 in the 3rd digit to ensure no linearization tables are applied to CH2.

Enter Code 4 | Cod_4 | 3X0 | 2nd digit selects the **frequency range** for the display

FIRST DIGIT
MEASUREMENT TASK
0 Voltage, Current
1 TC (type as per 2nd digit)
2 RTD/Resistance (type as per 2nd digit)
3 Second Digital Input Channel (type as per 2nd digit)

SECOND DIGIT
DIGITAL INPUT
0 Frequency - 99.999 Hz range from 0.001 Hz
1 Frequency - 999.99 Hz range from 0.01 Hz
2 Frequency - 99.999 kHz range from 1 Hz (1 s gate)
3 Frequency - 500 kHz range from 10 Hz (0.1 s gate)
4 Period - 9.9999 s (100 µs resolution)
5 Period - 999.99 ms (10 µs resolution)
6 Up/Down Counter with Prescaler
7 Set Prescaler

	Displayed Counts			
300	For 1 Hz	**1 0 0 0**	For 50 Hz	**5 0 0 0 0**
310	For 1 Hz	**1 0 0**	For 50 Hz	**5 0 0 0**
320	For 1 Hz	**1**	For 50 Hz	**5 0**
330	For 1 Hz	**0. 1**	For 50 Hz	**5**

Channel 2: Totalizer – Header in COUNT Position

Step 1 to Step 3

Steps 1 to 3 are the same for CH1 – Frequency Input and both CH2 – Flow Rate and CH2 – Totalizer. Follow Steps 1 to 3 under the heading **Channel 1 – Frequency Input** when carrying out channel 2 totalizer manual calibration procedures.

Step 4 – Make Sure the Prescaler is Set to 1

When you have established the K factor for the required unit of measurement, enter Code 4 and ensure that the prescale setting is still 1. Select 3 in the 1st digit to select the second digital input channel, 7 in the 2nd digit to enter the prescaler menu, and 0 in the 3rd digit to ensure no linearization tables are applied to CH2.

Enter Code 4 | Cod_4 | 370 | 2nd digit selects the **Set Prescaler** menu

FIRST DIGIT MEASUREMENT TASK
0 Voltage, Current
1 TC (type as per 2nd digit)
2 RTD/Resistance (type as per 2nd digit)
3 Second Digital Input Channel (type as per 2nd digit) →

SECOND DIGIT DIGITAL INPUT
0 Frequency - 99.999 Hz range from 0.001 Hz
1 Frequency - 999.99 Hz range from 0.01 Hz
2 Frequency - 99.999 kHz range from 1 Hz (1 s gate)
3 Frequency - 500 kHz range from 10 Hz (0.1 s gate)
4 Period - 9.9999 s (100 µs resolution)
5 Period - 999.99 ms (10 µs resolution)
6 Up/Down Counter with Prescaler
7 Set Prescaler → PrE_S 1

Do not change the prescale setting to anything other than 1

Use ⇧ ⇩ buttons to reset the prescale value to 1 if set to another number

Step 5 – Select the UP/DOWN Counter

When you have checked the prescaler, select the UP/DOWN counter setting as the mode for CH2. Enter Code 4 and select 3 in the 1st digit to select the second digital input channel, 6 in the 2nd digit to select the UP/DOWN counter, and 0 in the 3rd digit to ensure no linearization tables are applied to CH2.

Enter Code 4 | Cod_4 | 360 | 2nd digit selects the **Up/Down Counter with Prescaler** setting

FIRST DIGIT MEASUREMENT TASK
0 Voltage, Current
1 TC (type as per 2nd digit)
2 RTD/Resistance (type as per 2nd digit)
3 Second Digital Input Channel (type as per 2nd digit) →

SECOND DIGIT DIGITAL INPUT
0 Frequency - 99.999 Hz range from 0.001 Hz
1 Frequency - 999.99 Hz range from 0.01 Hz
2 Frequency - 99.999 kHz range from 1 Hz (1 s gate)
3 Frequency - 500 kHz range from 10 Hz (0.1 s gate)
4 Period - 9.9999 s (100 µs resolution)
5 Period - 999.99 ms (10 µs resolution)
6 Up/Down Counter with Prescaler
7 Set Prescaler

Step 6 – Select Display Resolution

At this point you should decide on where you want to position the decimal point on the display, based on the minimum and maximum displayed units you require, then set this in Code 1 [X61].

Enter Code 1 | Cod_1 | X61 | 3rd digit selects **channel 1**

then | diSP | 000 | 3rd digit selects **decimal point** position

5-Digit Display		6 or 8-Digit Display
XXXXX	**No decimal point**	**XXXXXX**
	Clock only	XX.XX.XX
	One Hundred Thousandths	X.XXXXX
X.XXXX	Ten Thousandths	XX.XXXX
XX.XXX	Thousandths	XXX.XXX
XXX.XX	Hundreds	XXXX.XX
XXXX.X	Tenths	XXXXX.X

Least Significant Digit

THIRD DIGIT DECIMAL POINT PLACEMENT
0 No decimal point
1 XX.XX.XX (6 or 8-digit version only)
2 X.XXXXX (6 or 8-digit version only)
3 X.XXXX
4 X.XXX
5 X.XX
6 X.X
7 Decimal Point set from the rear of the meter (X.XXXXX to XXXXXX)

Step 7 – Select the Data Source for the Primary Display

While leaving Code 1 after setting the position of the decimal point, set the 2nd digit to 5 and the 3rd digit to 0 to select the **primary display** [Cod_1] [X50].

The source for the primary display is set by selecting 0 in the 3rd digit and then entering the **select data source** mode. In this mode a number of choices are available as the source of data for the selected (primary) display.

Enter Code 1	Cod_1	X50	3rd digit 0 selects primary display.
then	SourC	oFF	Select the **channel** required as the source for the primary display.

Note:
The primary display is the default display for all single display Tiger 320 Series controllers (i.e. selecting 0, 1, or 2 in the 3rd digit selects the primary display). In dual and triple display controllers, the top display is the primary display. And in bargraphs the digital display is the primary display and the bargraph is the secondary display.

Step 8 – Select a New Display Message for the CH2 Display in the View Mode

The value displayed on CH2 can be viewed in the **view mode** by pressing the ⇧ button while in the operational display. The display toggles between [Ch2] and [*VALUE*].

If required, the [Ch2] message can be changed to display the unit of measure using the display editing function of the Texmate Meter Configuration Utility Program.

See www.texmate.com for details of the Texmate Meter Configuration Utility Program.

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Texmate has facilities in Japan, New Zealand, Taiwan, and Thailand. We also have authorized distributors throughout the USA and in 28 other countries.

For product details visit www.texmate.com
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