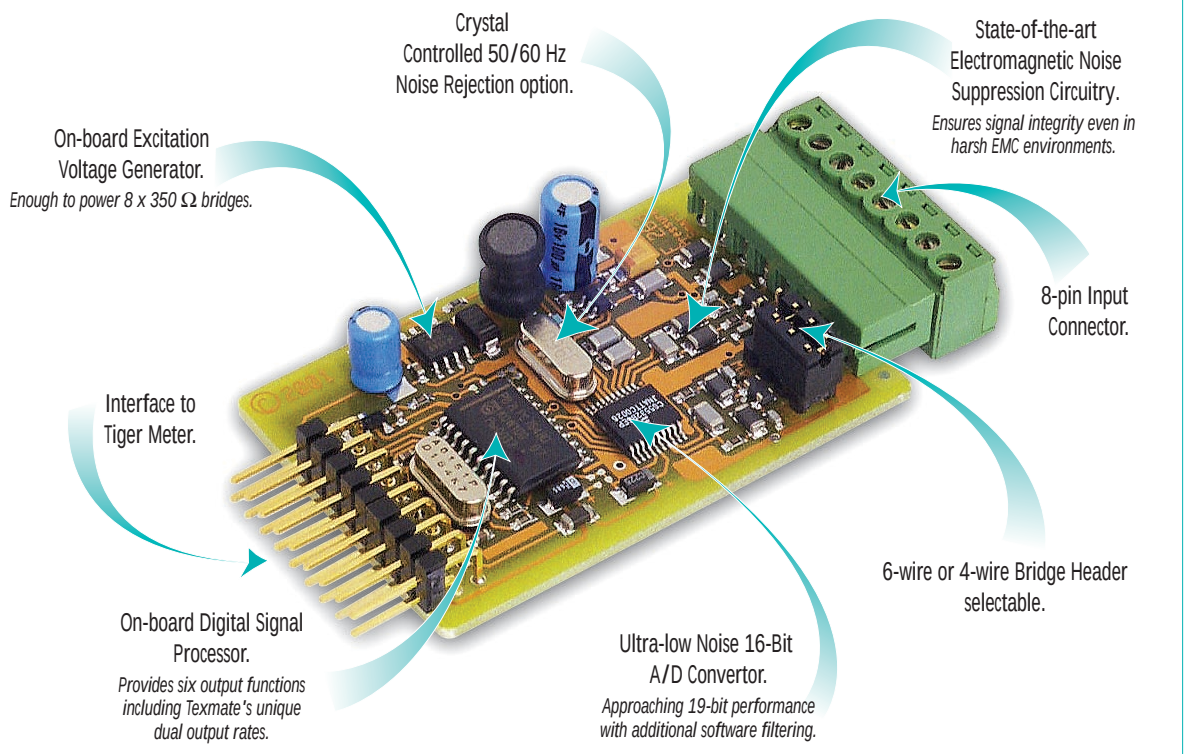
TEXMATE INC

Fits Tiger 320 Series

16-BIT SMART LOAD CELL INPUT MODULE



For the first time, a high performance load cell controller is available at a panel meter price

Combining this input module with the functionality of the Tiger 320 Series Operating System, results in a versatile, powerful controller. Now such tasks as weighing, bagging, batching, and continuous batching control can be performed.
In fact our customers have replaced multi-faceted control systems including weighing controllers, PLCs and timers with a single Tiger controller.

Input Module Order Code Suffix

ISS1 (50 Hz Rejection)

ISS2 (60 Hz Rejection)

Hardware Module Specifications	
Excitation	5 V DC, 130 mA maximum.
Input Range	Software selectable for sensors from 1 mV/V to 20 mV/V.
Input Sensitivity	0.08 µV/Count maximum.
Zero Drift	± 40 nV/ °C typical.
Span Drift	± 5 ppm/ ° C of full scale maximum.
Non-linearity	± 0.003% of full scale maximum.
Input Noise	160 nVpp typical at 1 Hz output rate.
Signal processing Rate	50 Hz maximum, 1 Hz minimum.

Software Module Features	
Dual output rates	Rapid and average response outputs.
	Ideal for 2 and 3-speed weighing / bagging systems.
Peak & Valley Outputs	Monitoring over and under-shoots.
Capture Output	Hardwire signal capture.
Rate of Change Output	Useful for fine tuning reaction times.
Frequency Select	ISS1 50 Hz noise rejection; ISS2 60 Hz noise rejection.

Some Relevant Tiger 320 Series Operating System Features
Auto Zero Maintenance.
Set TARE, Reset TARE.
Setpoint Timer Functions.
Setpoint Register Reset and Trigger Functions.
On-demand Calibration.
Macro Compiler for PLC Functions.
32-Point Linearization.
Totalizator and Serial Printing.

16-BIT SMART LOAD CELL

INPUTS

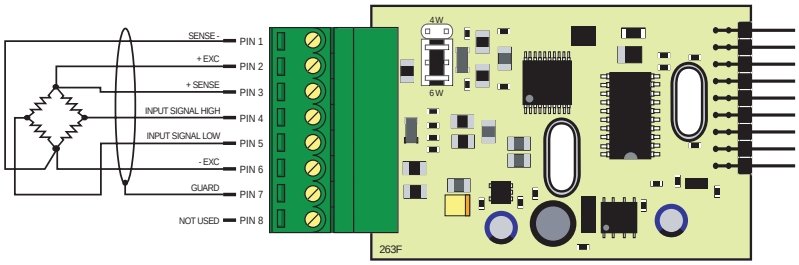
★ Smart High 16-bit Resolution High Accuracy

Load-cell Pressure

Smart Setup Registers

The meter uses three smart setup registers to configure smart input modules. ISS1 and ISS2 requires only **smart register 1** to be set up. This module produces **six output registers**. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6.

Connector Pinouts



6-wire Bridge Configuration (for 4-wire bridge disconnect sense leads)

Programming Procedures

1 Press the [P] and [▲] buttons at the same time to enter the main programming mode.

2 Press the [P] button three times to enter Code 2. Set Code 2 to [X77].

This setting enters the **smart register 1** code setup menu.

FIRST DIGIT
TIGER PROCESSING RATE
0 10 Hz
1 10 Hz
2 100 Hz
3 100Hz

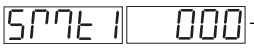
SECOND DIGIT	
MEASUREMENT TASK	
0	**Voltage, Current**
1	TC (3rd digit selects type of TC)
2	RTD 3-wire (3rd digit selects type of RTD)
3	RTD 2- or 4-wire (3rd digit selects type of RTD)
4	Frequency
5	Period
6	Counter
7	Smart Input Module

THIRD DIGIT	
OUTPUT REGISTER MAP	
0	**Averaged signal**
1	Rapid response signal*
2	Peak signal*
3	Valley signal*
4	Capture signal**
5	Rate of change of signal
6	-
7	Smart input module register 1 code setup

* *Signal output at the A/D sampling rate.*

** *Hardwire initiated from meter Capture pin.*

3 Press the [P] button.



This menu provides settings unique to the ISS1 input module.

FIRST DIGIT
FREQUENCY SELECT
0 60 Hz rejection
1 -
2 50 Hz rejection
3 -

SECOND DIGIT	
SENSOR INPUT mV/V	
0	1 mV/V
1	2 mV/V
2	3 mV/V
3	20 mV/V
4	-
5	-
6	-
7	-

THIRD DIGIT	
OUTPUT RATE	
0	**1 Hz averaged: 50/60 Hz rapid response**
1	10 Hz averaged: 50/60 Hz rapid response
2	-
3	50/60 Hz averaged: 800/960 Hz rapid response
4	-
5	-
6	-
7	-

4 Using the [▲][▼] buttons, select the relevant **line frequency rejection**, **sensor input**, and **output rate** settings.

Note the output registers in the 3rd digit are specific to ISS1 and ISS2. These registers vary for each different smart input module.

5 Press the [P] button.

This takes you back to the Code 2 menu.

6 Using the [▲][▼] buttons, reset the 3rd digit to select an output register from the output register map.

Select a Channel

Select the output register for the required channels

7 Press the [P] and [▲] button at the same time again to re-enter the main programming mode, then press the [P] button three times to enter Code 2.

8 Set Code 2 to [X7X]. Select the required processing rate for **CH1** in the 1st digit and the required register map settings in the 3rd digit.

CH1 Cod_2 X7X →

FIRST DIGIT
TIGER PROCESSING RATE
0 10 Hz
1 10 Hz
2 100 Hz
3 100 Hz

Note the output register map is different for each smart input module type.

* *Signal output at the A/D sampling rate.*

** *Hardwire initiated from meter Capture pin.*

THIRD DIGIT
OUTPUT REGISTER MAP
0 Averaged signal
1 Rapid response signal*
2 Peak signal*
3 Valley signal*
4 Capture signal**
5 Rate of change of signal
6 -
7 Smart input module register 1 code setup

9 Set Code 4 to [0X0]. Select the required register map settings for **CH2** in the 2nd digit.

CH2 Cod_4 0X0 →

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

SECOND DIGIT	
FOR VOLTAGE & CURRENT	
0 Channel 2 Disabled	
1 Direct (no post processing)	
2 Square Root of Channel 2	
3 Inverse of Channel 2	
4 Output Register 1 (smart module)*	
5 Output Register 2 (smart module)*	
6 Output Register 3 (smart module)*	
7 Output Register 4 (smart module)*	

Note:
The logic for CH2 is not the same as CH1, CH3, or CH4. The 1st and 3rd digits must both be set to 0. Selecting 040 to 070 in the 2nd digit of Code 4 directly selects one of the following settings in the output register map (3rd digit):

2nd Digit	Output Register Map
4 selects	**0 Averaged signal**
5 selects	1 Rapid response signal*
6 selects	2 Peak signal*
7 selects	3 Valley signal*

10 If required enter Code 5 and select the required register map settings for **CH3** in the 3rd digit.

CH3 Cod_5 X7X →

FIRST DIGIT
CH3 POST PROCESSING
0 Direct Display of Input (no processing)
1 Square Root of Channel 3
2 Inverse of Channel 3
3 **Meters with 4 kB memory** NO Linearization **Meters with 32 kB memory** 32-point Linearization of CH3 using Table 3
Note: All linearization tables are set up in the Calibration Mode [24X].

THIRD DIGIT
OUTPUT REGISTER MAP
0 Averaged signal
1 Rapid response signal*
2 Peak signal*
3 Valley signal*
4 Capture signal**
5 Rate of change of signal
6 -
7 Smart input module register 1 code setup

Note the output register map is different for each smart input module type.

* *Signal output at the A/D sampling rate.*

** *Hardwire initiated from meter Capture pin.*

11 If required enter Code 6 and select the required register map settings for **CH4** in the 3rd digit.

CH4 Cod_6 X7X →

FIRST DIGIT
CH4 POST PROCESSING
0 Direct Display of Input (no processing)
1 Square Root of Channel 4
2 Inverse of Channel 4
3 **Meters with 4 kB memory** NO Linearization **Meters with 32 kB memory** 32-point Linearization of CH4 using Table 4
Note: All linearization tables are set up in the Calibration Mode [24X].

Press the P button to save the settings.

12 Press the P and ↑ buttons at the same time to return to the operational display.

Example Load Cell Setup Procedure

For example, a 2 mV/V load cell requires maximum signal resolution and minimum signal noise for a slowly varying change in weight. Line frequency is 50 Hz. As an option, the user also requires to monitor the raw signal.

Select a **load input** of 2 mV/V and a 1 Hz averaged **output rate** with the **averaged signal** read by CH1 and the **rapid response signal** read by CH3.

1 **Select LINE FREQUENCY as 50 Hz for 2 mV/V with a 1 Hz averaged OUTPUT RATE:**

In [CODE 2] select [X77] then press [P] button.

Display toggles between [SMt1] [000]

Set [SMt1] to [210]

2 **Select the AVERAGED SIGNAL for CH1:**

In [CODE 2] select [X70]

3 **Select the RAPID RESPONSE SIGNAL for CH3:**

In [CODE 5] select [X71]

Customer Configuration Settings:

		1st Digit	2nd Digit	3rd Digit
	SMt 1			
CH1	Cod_2		7	
CH2	Cod_4	0		0
CH3	Cod_5		7	
CH4	Cod_6		7	

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