TEXMATE

BL-40RPM
Leopard RPM Meter
4 Digit 0.56" LEDs
in a 1/16 DIN CASE

LEOPARD FAMILY

CE

An economically smart programmable meter relay with isolated 4 to 20 mA retransmission or control loop output capability for measurement and control applications in a 96 X 24 mm case.

General Features

- This meter has been designed specifically for RPM measurements. Just enter the pulses per revolution and the BL-40RPM meter will calculate and display the RPM reading.

- Three ranges with resolutions of 0.1 RPM, 1 RPM and 10 RPM (99.99 X 1000 RPM max.).

- Optional isolated 16 bit analog output. User or factory scalable to 4 to 20 mA, 0 to 20 mA or 0 to 10 V across any desired digital span from one count to the full scale range of 9999.

- Auto-sensing AC/DC power supply. For voltages between **85-265 V AC / 95-370 V DC (PS1)** or 15-48 V AC / 10-72 V DC (PS2).

- 24 V DC excitation is available to power external sensors.

- Standard red or optional green or super bright red 4-digit LED with display range 0 to 9999.

- Three annunciator LEDs provide front panel alarm status indication for up to three setpoints.

- One 10 Amp Form C and one 5 Amp Form A relay, or up to three 5 Amp Form A relays are available.

- When analog output is installed, one 10 Amp Form C or two 5 Amp Form A relays can be supported.

- Automatic intelligent averaging smooths noisy signals, while providing a fast display response to real level changes.

Software Features

- Three-button programming from the front panel (UP, DOWN and PROGRAM buttons).

- Three front panel selectable ranges.

- Front panel selectable four-level brightness control of digital display, and setpoint LEDs.

- Three programmable setpoints.

- Relay activation can be selected to occur above (HI) or below (LO) each setpoint.

- Hysteresis setting for all three setpoints. Delay on make and delay on break for SP1 and SP2.

- Peak and Valley. View and Reset.

Input Module Compatibility

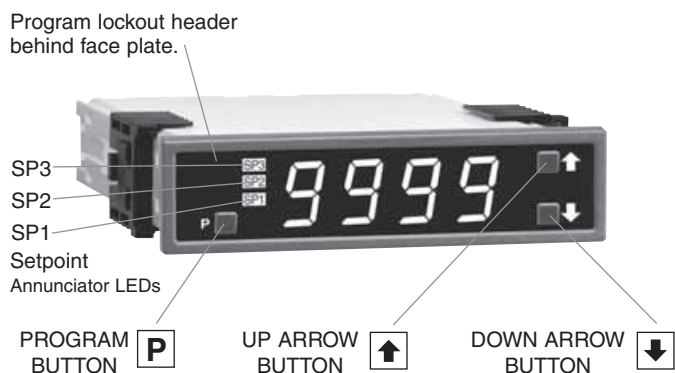There is 1 Plug-in Modular Input Signal Conditioner, IF05, for this specialized RPM only member of the Leopard Family.

LEOPARD

Specifications

Input Specs: ....Depends on input signal conditioner
A/D Converter:...........14 bit single slope
Accuracy:...................2 count
Temp. Coeff.: ....100 ppm/°C (Typical)
Warm up time:...........2 minutes
Conversion Rate: ......5 conversions per second (Typical)
Display:.......................**4 digit 0.56" Red LED display (std)**, 0.56" Red, Green or Super Bright Red (optn). Range 9999 counts.
Polarity:.......................Assumed positive.
Decimal Selection:....Front panel button selectable, X•X•X•X•
Positive Overrange:..Top segments of digital display flash
Relay Output: ....Three 5 Amp Form A relays or one 10 Amp Form C, and one 5 Amp Form A relay.
Analog Output:..........Isolated 16 bit user scalable mA or V
   OIC (mA out)............4-20 mA @ 0 to 500Ω max loop resistance
   OIV (volts out)..........0-10 V DC @ 500 Ω or higher resistance
Power Supply: ....AC/DC Auto sensing wide range supply
   PS1 (std) ....**85-265 VAC / 95-370 VDC @ 2.5W max 3.2W**
   PS2 ....15-48 VAC / 10-72 VDC @ 2.5W max 3.2W
Operating Temp.:.......0 to 60 °C
Storage Temp: ....–20 °C to 70 °C.
Relative Humidity: ....95% (non condensing)
Case Dimensions:.....1/16 DIN Bezel 96x24mm Depth behind bezel 122.2mm (4.83") Plus 12.7mm (0.5") for Right-angled connectors
Weight:.......................7 oz, 9 oz when packed

Index

Program lockout header
behind face plate.

SP3
SP2
SP1
Setpoint
Annunciator LEDs

PROGRAM **P**
BUTTON

UP ARROW **↑**
BUTTON

DOWN ARROW **↓**
BUTTON

Front Panel Buttons

Program Button

The P button is used to move from one program step to the next. When pressed at the same time as the ↑ button, it initiates the **calibration mode**. When pressed at the same time as the ↓ button, it initiates the **setpoint setting mode**.

Up Button

When in the operational display, pressing the ↑ button alone, allows you to view and reset the Peak and Valley (Highest and Lowest Readings.)

When in the **calibration mode** or the **setpoint setting mode** the ↑ button is used to increase the value of the displayed parameter.

Down Button

When in the operational display, pressing the ↓ button alone, allows you to view, but not change, the setting of setpoint 1, 2 and 3.

When in the **calibration mode** or the **setpoint setting mode** the ↓ button is used to decrease the value of the displayed parameter.

To explain software programming procedures, logic diagrams are used to visually assist in following the programming steps. The fol-lowing symbols are used throughout the logic diagrams to represent the buttons and indicators on the meter:

| Symbol	Explanation
8.8.8.8.	This symbol represents the OPERATIONAL DISPLAY.
P	This is the PROGRAM button.
↑	This is the UP ARROW button.
↓	This is the DOWN ARROW button.

When a button is shown, press and release it to go onto the next step in the direction indicated by the arrow. When two or more buttons are shown, each with an arrow, this indicates that there is a number of programming choices.

When two buttons are shown side by side and enclosed by a dotted line, they must be pressed at the same time then released to go onto the next programming step.

XXXX

0

If the display is shown with XXXX, it means the value displayed will be the previously set value. When a number is shown, it indicates the initial factory default setting or a specific "example number".

2Ero
0 ↑↓
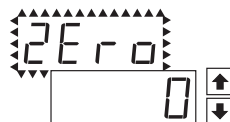
When two displays are shown together with bursts, this indicates that the display is toggling (flashing) between the name of the function and the value.

[Span]
[10000]

Text or numbers shown between square brackets in a procedure indicate the programming code name of the function or the value displayed on the meter display.

0 ↑↓
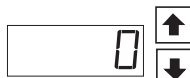
When the ↑ and ↓ buttons are shown together, the display value can be increased by pressing and releasing the ↑ button or decreased by pressing and releasing the ↓ button.

oFF
on ↑↓
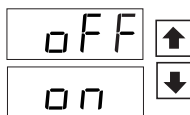
When the ↑ and ↓ buttons are shown with two displays, either display can be selected by pressing and releasing the ↑ or ↓ buttons.

hhh- ↑↓
[LhL-]
[hLh-]
[LLL-]
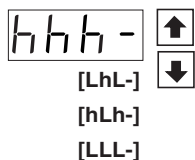
When there are more than two display selections they are shown in brackets below the first display and are also selectable by pressing and releasing the ↑ or ↓ buttons.
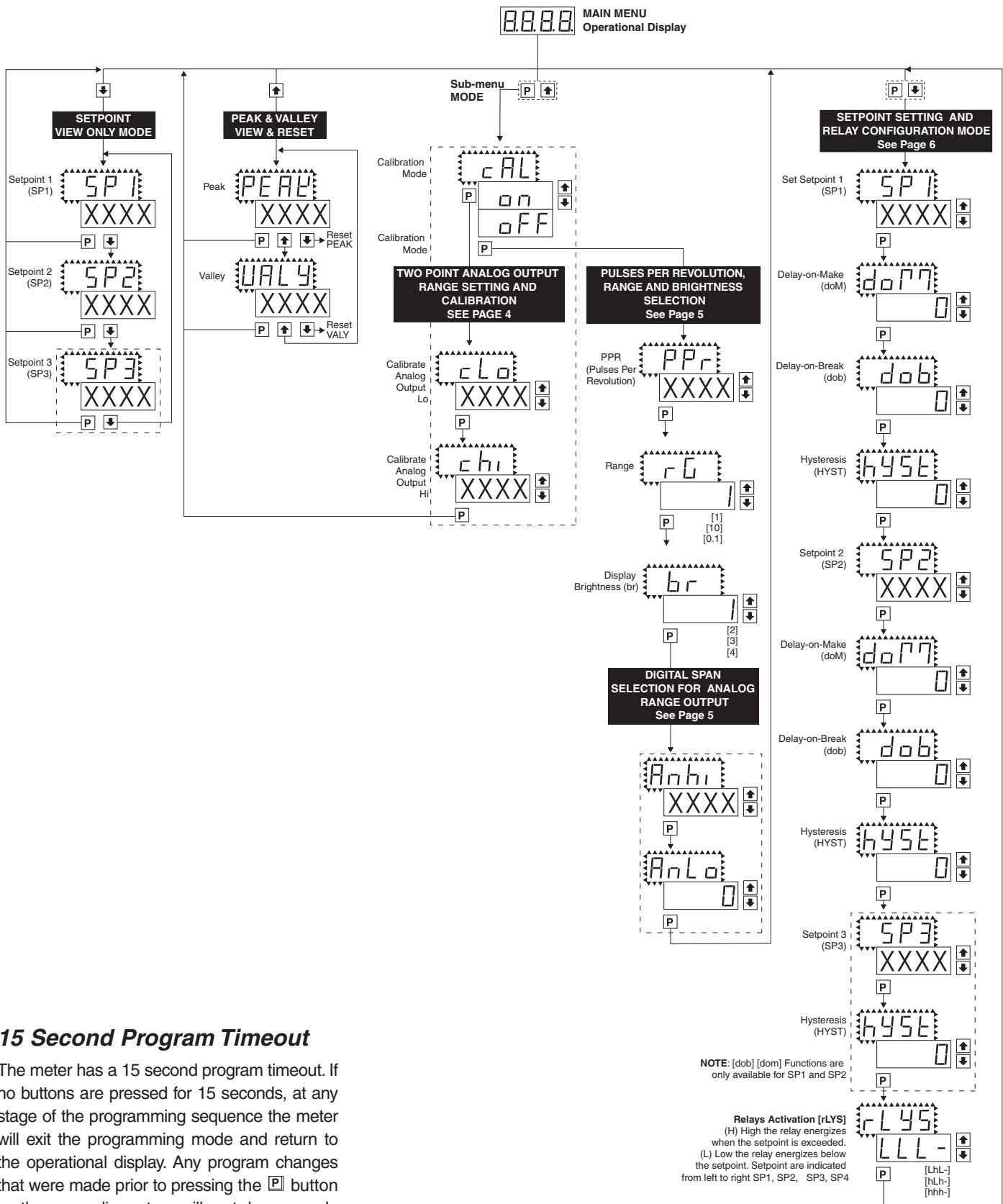
cLo
XXXX ↑↓
P
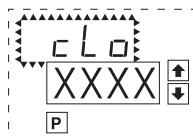
A dotted box indicates these functions are omitted or bypassed when the related hardware is not present.

The BL-40RPM is an intelligent meter with a hierarchical software structure designed for easy programming and operation, as shown below in the software logic tree.

After the meter has been powered up, the four digits light up for three seconds and then settle to the operational display indicating the input signal.

MAIN MENU
Operational Display

Sub-menu **MODE**

SETPOINT VIEW ONLY MODE

Setpoint 1 (SP1) — SP1 XXXX

Setpoint 2 (SP2) — SP2 XXXX

Setpoint 3 (SP3) — SP3 XXXX

PEAK & VALLEY VIEW & RESET

Peak — PEAP XXXX — Reset PEAK

Valley — UALY XXXX — Reset VALY

Calibration Mode — cAL on oFF

Calibration Mode

TWO POINT ANALOG OUTPUT RANGE SETTING AND CALIBRATION SEE PAGE 4

Calibrate Analog Output Lo — cLo XXXX

Calibrate Analog Output Hi — chi XXXX

PULSES PER REVOLUTION, RANGE AND BRIGHTNESS SELECTION See Page 5

PPR (Pulses Per Revolution) — PPr XXXX

Range — rG 1 [1] [10] [0.1]

Display Brightness (br) — br 1 [2] [3] [4]

DIGITAL SPAN SELECTION FOR ANALOG RANGE OUTPUT See Page 5

Anhi XXXX

AnLo 0

SETPOINT SETTING AND RELAY CONFIGURATION MODE See Page 6

Set Setpoint 1 (SP1) — SP1 XXXX

Delay-on-Make (doM) — doM 0

Delay-on-Break (dob) — dob 0

Hysteresis (HYST) — hYSt 0

Setpoint 2 (SP2) — SP2 XXXX

Delay-on-Make (doM) — doM 0

Delay-on-Break (dob) — dob 0

Hysteresis (HYST) — hYSt 0

Setpoint 3 (SP3) — SP3 XXXX

Hysteresis (HYST) — hYSt 0

NOTE: [dob] [dom] Functions are only available for SP1 and SP2

Relays Activation [rLYS]
(H) High the relay energizes when the setpoint is exceeded.
(L) Low the relay energizes below the setpoint. Setpoint are indicated from left to right SP1, SP2, SP3, SP4

rLYS LLL- [LhL-] [hLh-] [hhh-]

15 Second Program Timeout

The meter has a 15 second program timeout. If no buttons are pressed for 15 seconds, at any stage of the programming sequence the meter will exit the programming mode and return to the operational display. Any program changes that were made prior to pressing the P button in the preceding step will not be saved.

Two Point Analog Output Range Setting and Calibration

STEP A Enter the Calibration Mode
  1) Press the ⊡ and ⬆ buttons at the same time. Display toggles between [cAL] and [oFF] if the Analog Output option is installed.

Note: If at this point the display skips directly to toggle between [PPr] and the previous Pulses per revolution setting (STEP E) then the software is detecting that the optional analog output hardware is NOT installed.

STEP B Enter the [oUT] Analog Output Calibration Mode
  1) Press the ⬆ or ⬇ button. Display changes from [oFF] to [on].
  2) Press the ⊡ button. Display toggles between [cLo] and an internal scale factor.

STEP C Calibrate the [cLo] Low Analog Output
  1) Select the voltage or current output header position on the output module. (See Component Layout on page 9).
  2) Connect a multimeter to pins 16 and 17 on the output module. (See Rear Panel Pinouts on page 8). Using the ⬆ and ⬇ buttons, adjust the analog output to the desired low value as shown on the multimeter display. cLo may be adjusted to any value from –0.3 mA to 17 mA (mA output selected) or from –0.6 V to 8 V (volt output selected)
  3) Press the ⊡ button. Display toggles between [chi] and an internal scale factor.

STEP D Calibrate the [chi] High Analog Output
  1) Using the ⬆ and ⬇ buttons, adjust the analog output to the desired high value as shown on the multimeter display. chi may be adjusted to any value from 17 mA to 21 mA (mA output selected) or from 8 V to 10.3 V (volt output selected)
  2) Press the ⊡ button. The display exits the calibration mode and returns to the operational display.

Note: Having established the Low and High range of the analog output, the digital span can now be selected which will set the two display points between which the analog output will occur. (See STEP I and STEP J on Page 5).
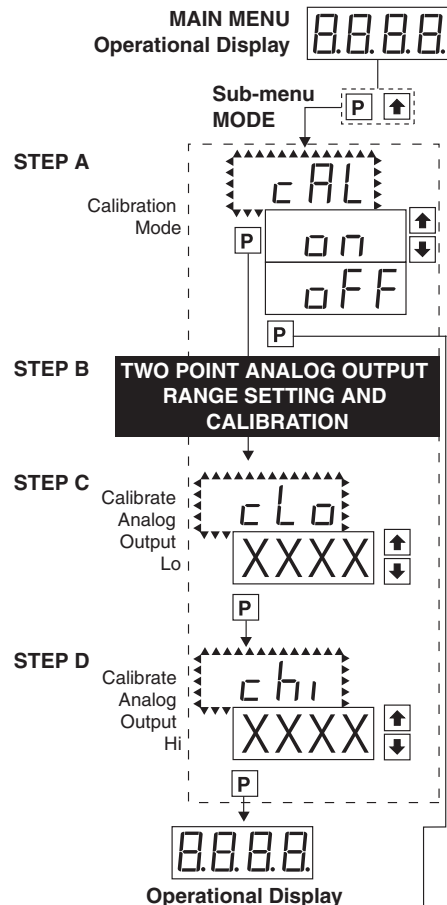
Pulses Per Revolution, Range and Brightness Selection

STEP E Enter the Range Selection Mode Through the Sub Menu [cAL] [oFF]
  1) Press the ⊡ and ⬆ buttons at the same time. Display toggles between [cAL] and [oFF].
  2) Press the ⊡ button. Display toggles between [PPr] and the previous pulses p e r revolution setting.

STEP F Enter the Pulses per revolution (PPR)
  1) Using the ⬆ and ⬇ buttons, enter the number of pulses per revolution. Any number between 1 and 9999 may be entered.
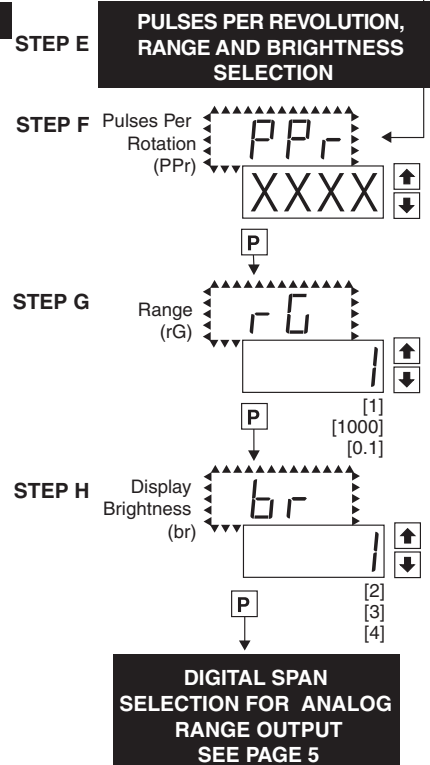 2) Press the ⊡ button. Display toggles between [rG] and the previous. range setting.

STEP G Select the Range
  1) Using the ⬆ and ⬇ buttons, select the appropriate range. There are three ranges with resolutions of 0.1 (max. 999.9 RPM), 1 (max. 9999 RPM) and 10 RPM (max. 99.99 X 1000 RPM).
  2) Press the ⊡ button. Display toggles between [br] and the previous brightness setting.

STEP H Set the Display Brightness
  1) Using the ⬆ and ⬇ buttons, adjust the display to the desired brightness setting (4 is the brightest setting).
  2) Press the ⊡ button. Display brightness changes to new setting and display toggles between [Anhi] and the previous [Anhi] setting, if the Analog Output Option is installed.

  Note: If the Analog Output option is not installed then the displays returns to the operational display.

MAIN MENU Operational Display

Sub-menu MODE

STEP A — Calibration Mode — cAL / on / oFF

STEP B — **TWO POINT ANALOG OUTPUT RANGE SETTING AND CALIBRATION**

STEP C — Calibrate Analog Output Lo — cLo / XXXX

STEP D — Calibrate Analog Output Hi — chi / XXXX

Operational Display

STEP E — **PULSES PER REVOLUTION, RANGE AND BRIGHTNESS SELECTION**

STEP F — Pulses Per Rotation (PPr) — PPr / XXXX

STEP G — Range (rG) — rG / 1 — [1] [1000] [0.1]

STEP H — Display Brightness (br) — br / 1 — [2] [3] [4]

DIGITAL SPAN SELECTION FOR ANALOG RANGE OUTPUT SEE PAGE 5

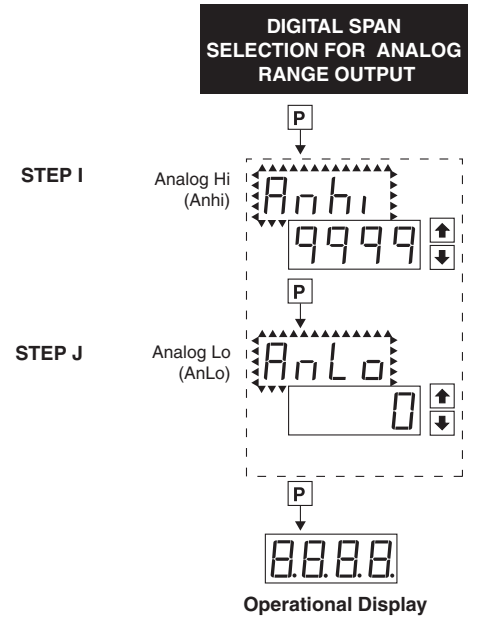## *Digital Span Selection for Analog Range Output*

STEP I   Set the Display Corresponding to the Analog High Output
  1) Using the ⬆ and ⬇ buttons, adjust the display to the desired value at which the selected analog high output will occur.
  2) Press the P button. Display toggles between [AnLo] and previous [AnLo] setting.

STEP J   Set the Display Corresponding to the Analog Low Output
  1) Using the ⬆ and ⬇ buttons, adjust the display to the value at which the selected analog low output range will occur.
  2) Press the P button. The display exits the calibration mode and returns to the operational display.

Note: Any two points from 0 to 9999 can be selected for which the specified analog output occurs. The display values for analog high and analog low can be reversed for reversed 20-4 mA output. The difference between the two display points can be as small as two counts however small spans cause the 16 bit D to A to increment in staircase steps.

DIGITAL SPAN SELECTION FOR ANALOG RANGE OUTPUT

P

STEP I   Analog Hi (Anhi) | Anhi |
| 9999 |

P

STEP J   Analog Lo (AnLo) | AnLo |
| 0 |

P

| 8.8.8.8. |

Operational Display

Setpoint Setting and Relay Configuration Mode

The following programming steps are required to enter the setpoint values and configure the relay functions in a meter with four relays using four setpoints. Generally if less than four relays are installed the software auto detects missing relays and deletes reference to them from the menu. In some cases setpoints without relays are operational for display only purposes.

STEP A   Enter the Setpoint Mode
  1) Press the [P] and [↓] buttons at the same time.
     Display toggles between [SP1] and the previous [SP1] setting.

STEP B   Set Setpoint 1 (SP1)
  1) Using the [↑] and [↓] buttons, adjust the display to the desired SP1 value.
  2) Press the [P] button. Display toggles between [doM] and the previous [doM] setting.

STEP C   Set the SP1 Delay-on-Make (doM) Delay Time Setting
  1) Using the [↑] and [↓] buttons, adjust the display to the desired [doM] value
     (0 to 9999 seconds). The reading must continuously remain in an alarm condition
     until this delay time has elapsed before the relay will make contact (energize).
  2) Press the [P] button. Display toggles between [dob] and the previous [dob] setting.

STEP D   Set the SP1 Delay-on-Break (dob) Delay Time Setting
  1) Using the [↑] and [↓] buttons, adjust the display to the desired [dob] value (0 to 9999
     seconds). The reading must continuously remain in an non-alarm condition until this
     delay time has elapsed before the relay will break contact (de-energize).
  2) Press the [P] button. Display toggles between [HYSt] and the previous [HYSt]
     setting.

STEP E   Set the Hysteresis Setting for Setpoint 1
  1) Using the [↑] and [↓] buttons, adjust the display to the desired hysteresis [HYSt] value.
  2) Press the [P] button. Display toggles between [SP2] and the previous [SP2] setting.
     NOTE: Half of the Hysteresis value selected is applied above and below the setpoint.

NOTE: Steps F, G, H and J have functionally the same procedure as steps B, C, D, and E shown above.

STEP F   Set Setpoint 2 (SP2)
STEP G   Set the SP2 Delay-on-Make (doM) Delay Time Setting
STEP H   Set the SP2 Delay-on-Break (dob) Delay Time Setting
STEP I   Set the Hysteresis Setting for Setpoint 2
  1) Using the [↑] and [↓] buttons, adjust the display to the desired hysteresis [HYSt] value.
  2) Press the [P] button. Display toggles between [SP3] and the previous [SP3] setting.

STEP J   Set Setpoint 3 (SP3) (No [doM] or [dob])
  1) Using the [↑] and [↓] buttons, adjust the display to the desired SP3 value.
  2) Press the [P] button. Display toggles between [HYSt] and the previous [HYSt]
     setting.
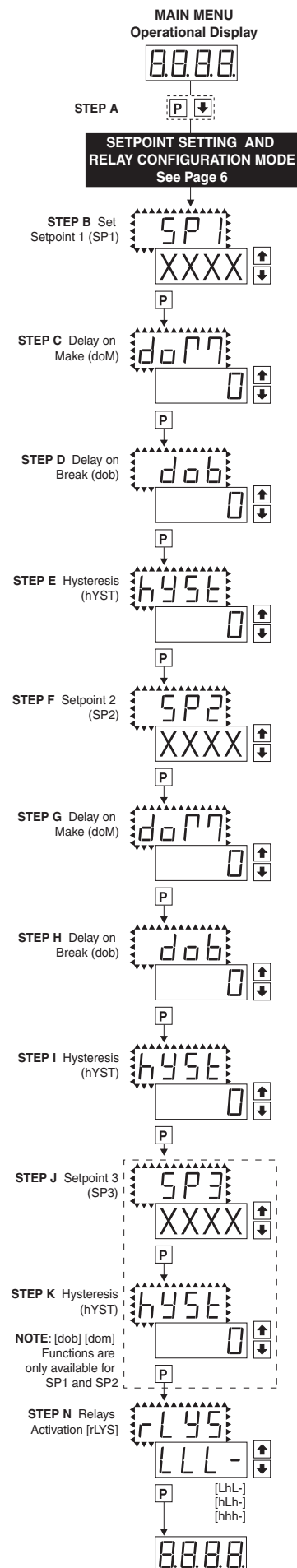
STEP K   Set the Hysteresis Setting for Setpoint 3
  1) Using the [↑] and [↓] buttons, adjust the display to the desired hysteresis [HYSt] value.
  2) Press the [P] button. Display toggles between [rLYS] and the previous relay setting.

STEP N   Set Relay Activation mode [rLYS]
     (H) High the relay energizes when the setpoint is exceeded. (L) Low the relay energizes
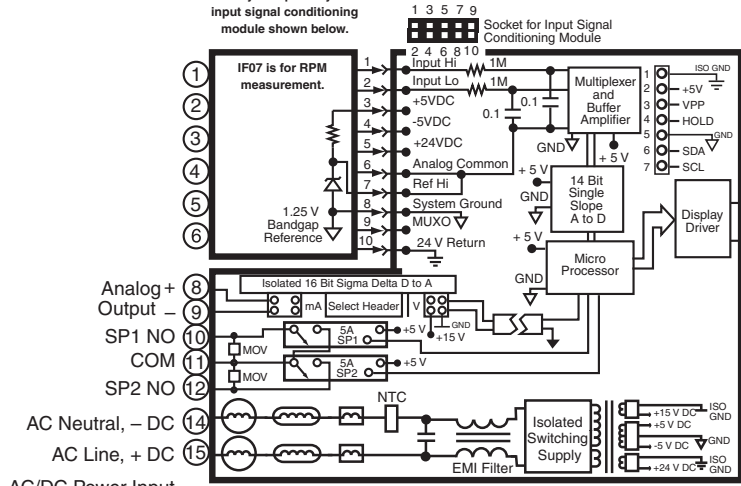   below the setpoint. The setpoint is indicated from left to right SP1, SP2, and SP3.
  1) Using the [↑] and [↓] buttons, adjust the reading on the display to the desired
     relay settings: [LLL-], [LHL-], [LLH-], [HHH-].
     If only 2 relays installed [LH] [HL] [HH] [LL].
  2) Press the [P] button.
     The meter exits the setpoint mode and returns to the operational display.

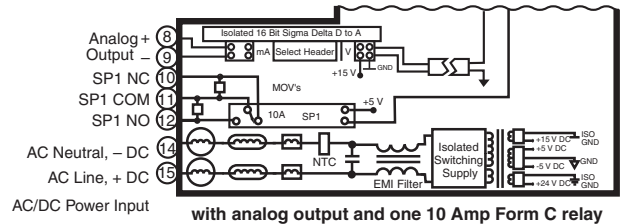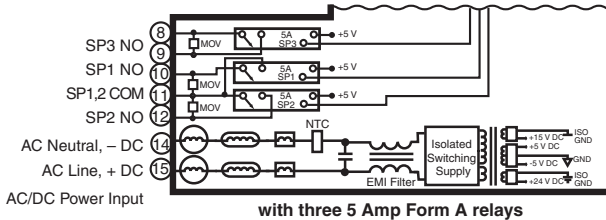**The Setpoint Relay programming mode is now complete.**

MAIN MENU
Operational Display

STEP A

SETPOINT SETTING AND
RELAY CONFIGURATION MODE
See Page 6

STEP B Set Setpoint 1 (SP1)

STEP C Delay on Make (doM)

STEP D Delay on Break (dob)

STEP E Hysteresis (hYST)

STEP F Setpoint 2 (SP2)

STEP G Delay on Make (doM)

STEP H Delay on Break (dob)

STEP I Hysteresis (hYST)

STEP J Setpoint 3 (SP3)

STEP K Hysteresis (hYST)

NOTE: [dob] [dom] Functions are only available for SP1 and SP2

STEP N Relays Activation [rLYS]

[LhL-]
[hLh-]
[hhh-]

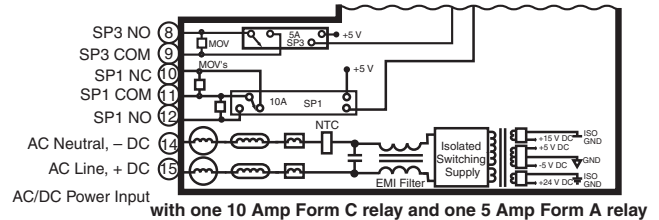**This specialized RPM member of the Leopard Family accepts only the input signal conditioning module shown below.**

Socket for Input Signal Conditioning Module

IF07 is for RPM measurement.

1.25 V Bandgap Reference

Input Hi — 1M
Input Lo — 1M
+5VDC
-5VDC
+24VDC
Analog Common
Ref Hi
System Ground
MUXO
24 V Return

Multiplexer and Buffer Amplifier

ISO GND
+5V
VPP
HOLD
GND
SDA
SCL

14 Bit Single Slope A to D

Micro Processor

Display Driver

PROGRAM LOCK

LOCK
ON
OFF

SP3
SP2
SP1

999.9

Analog + Output –
SP1 NO
COM
SP2 NO
AC Neutral, – DC
AC Line, + DC
AC/DC Power Input

Isolated 16 Bit Sigma Delta D to A
mA Select Header V
5A SP1
5A SP2
MOV
MOV
NTC
EMI Filter
Isolated Switching Supply
+15 V DC ISO GND
+5 V DC
-5 V DC GND
+24 V DC ISO GND

BL-40RPM Functional Diagram
with analog output and two 5 Amp Form A relays

Analog + Output –
SP1 NC
SP1 COM
SP1 NO
AC Neutral, – DC
AC Line, + DC
AC/DC Power Input

Isolated 16 Bit Sigma Delta D to A
mA Select Header V
MOV's
10A SP1
NTC
EMI Filter
Isolated Switching Supply
+15 V DC ISO GND
+5 V DC
-5 V DC GND
+24 V DC ISO GND

with analog output and one 10 Amp Form C relay

SP3 NO
SP1 NO
SP1,2 COM
SP2 NO
AC Neutral, – DC
AC Line, + DC
AC/DC Power Input

MOV
5A SP3
MOV
5A SP1
MOV
5A SP2
NTC
EMI Filter
Isolated Switching Supply
+15 V DC ISO GND
+5 V DC
-5 V DC GND
+24 V DC ISO GND

with three 5 Amp Form A relays

SP3 NO
SP3 COM
SP1 NC
SP1 COM
SP1 NO
AC Neutral, – DC
AC Line, + DC
AC/DC Power Input

MOV
5A SP3
MOV's
10A SP1
NTC
EMI Filter
Isolated Switching Supply
+15 V DC ISO GND
+5 V DC
-5 V DC GND
+24 V DC ISO GND

with one 10 Amp Form C relay and one 5 Amp Form A relay

This meter comes standard with screw terminal plug connections.

Top Catches
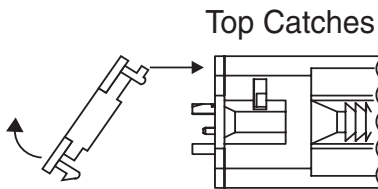
Release From Bottom

TO REMOVE REAR COVER

The BL-40RPM functions only with the IF07 frequency module

1 2 3 4 5 6   8 9 10 11 12   14 15

Relays and/or Analog Outputs as shown above

AC Neutral – DC

AC Line + DC
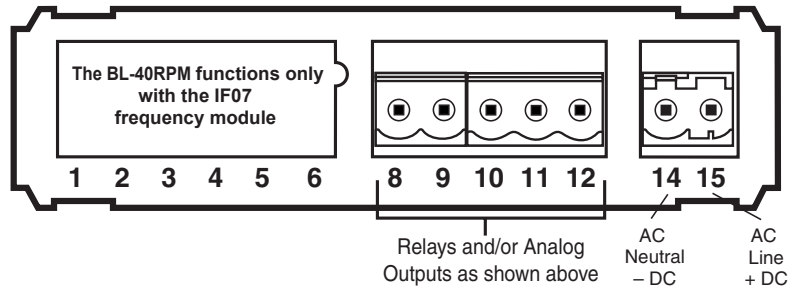
Auto-sensing AD/DC power supply

PS1   85 to 265 VAC / 95 to 370 VDC

PS2   15 to 48 VAC / 10 to 72 VDC

This meter uses plug-in type screw terminal connectors for all input and output connections. The power supply connections (pins 14 and 15) have a unique plug and socket outline to prevent cross connection. The main board uses standard right-angled connectors.

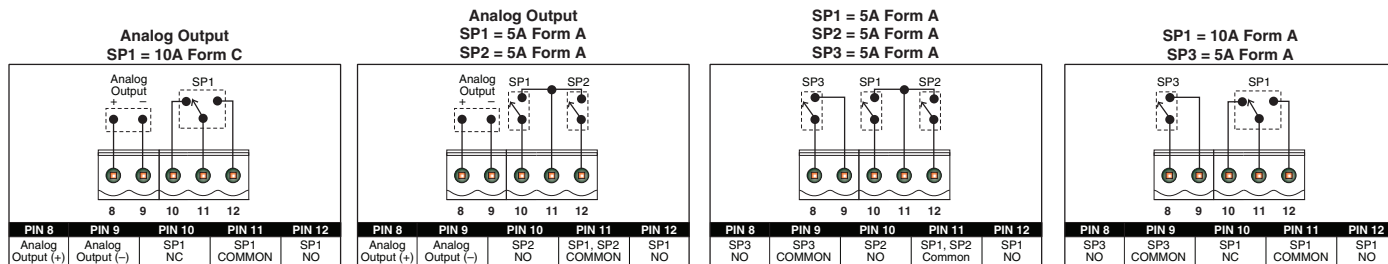Replacement 2-, 3-, and 4-pin plug connectors are available (see Accessories on page 12).

Pin Socket

Input Power
Screw Terminal Plug

Pin Socket

Right-angled
Screw Terminal Plug
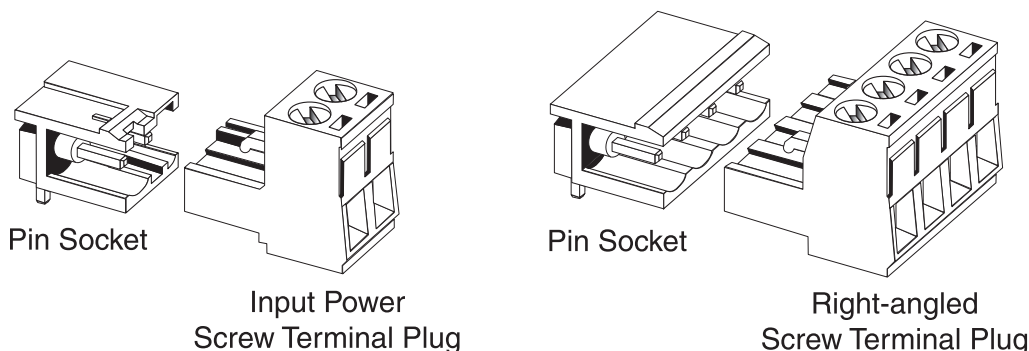
WARNING: AC and DC input signals and power supply voltages can be hazardous. Do Not connect live wires to screw terminal plugs, and do not insert, remove or handle screw terminal plugs with live wires connected.

Pin Descriptions

Input Signal – Pins 1 to 6

Pins 1 to 6 are reserved for the input signal conditioner. See the data sheet for the selected input signal conditioner.

Pins 8 to 12 – Relay and Analog Output Pins

Analog Output
SP1 = 10A Form C

	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12
	Analog Output (+)	Analog Output (−)	SP1 NC	SP1 COMMON	SP1 NO

Analog Output
SP1 = 5A Form A
SP2 = 5A Form A

	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12
	Analog Output (+)	Analog Output (−)	SP2 NO	SP1, SP2 COMMON	SP1 NO

SP1 = 5A Form A
SP2 = 5A Form A
SP3 = 5A Form A

	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12
	SP3 NO	SP3 COMMON	SP2 NO	SP1, SP2 Common	SP1 NO

SP1 = 10A Form A
SP3 = 5A Form A

	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12
	SP3 NO	SP3 COMMON	SP1 NC	SP1 COMMON	SP1 NO

Pins 14 and 15 – AC/DC Power Input

Auto sensing AC/DC power supply. For voltages between 85-265 VAC or 95-370 VDC (PS1).

Pin 14 & Pin 15 - AC/DC Power Input: These pins are the power pins of the meter and they only accept a special polarized screw terminal plug that can not be inserted into any other input socket. The standard meter has a auto sensing AC/DC power supply that operates from 85-265 VAC/95-370 VDC (PS1 Std). An optional isolated low voltage power supply that operates from 15-48 VAC/10-72 VDC (PS2) is also available.

Internal Header Pin out

1 — ISO GND
2 — +5V
3 — VPP
4 — HOLD
5 — GND
6 — SDA
7 — SCL
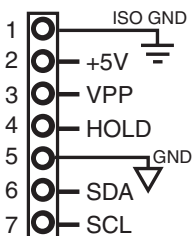
Internal header pins 1, 2, 3, 6, and 7 are for factory settings only. Not for external use!

4 HOLD. By connecting the HOLD pin to the GND pin, the displayed reading is frozen, however, A/D conversions continue. When the HOLD pin is disconnected from the GND pin, the correct reading is displayed.
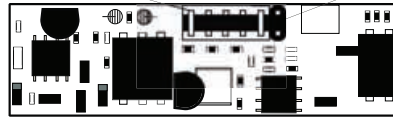
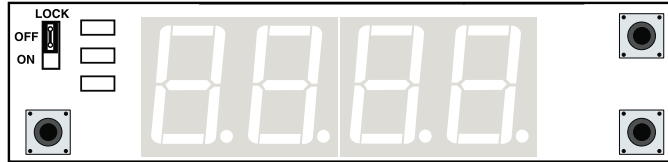**5 GND.** This pin is connected to the internal power supply ground.

4 to 20 mA (0 to 20 mA) Selection Position

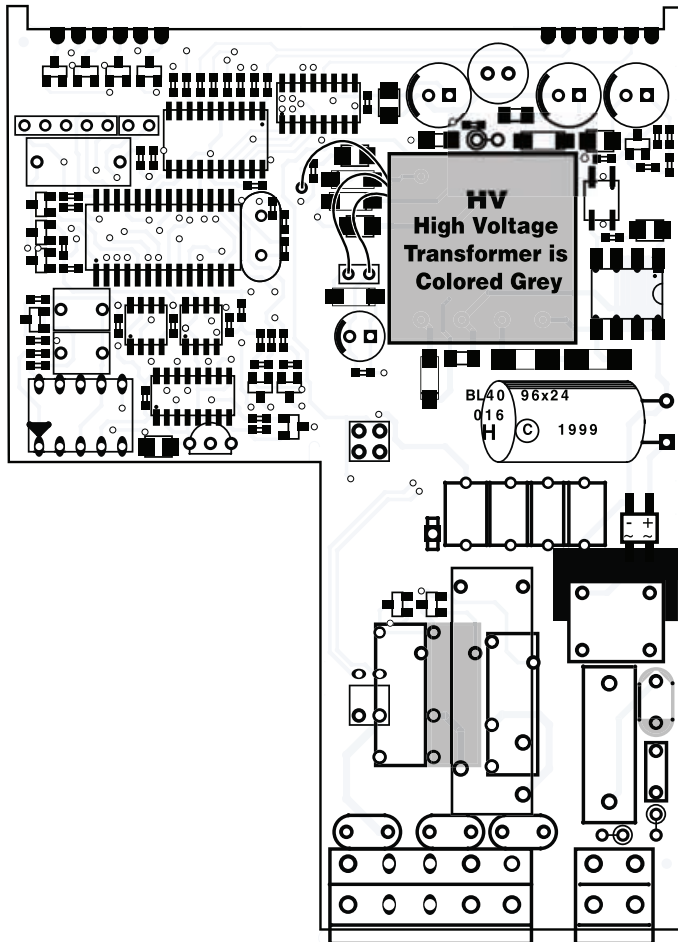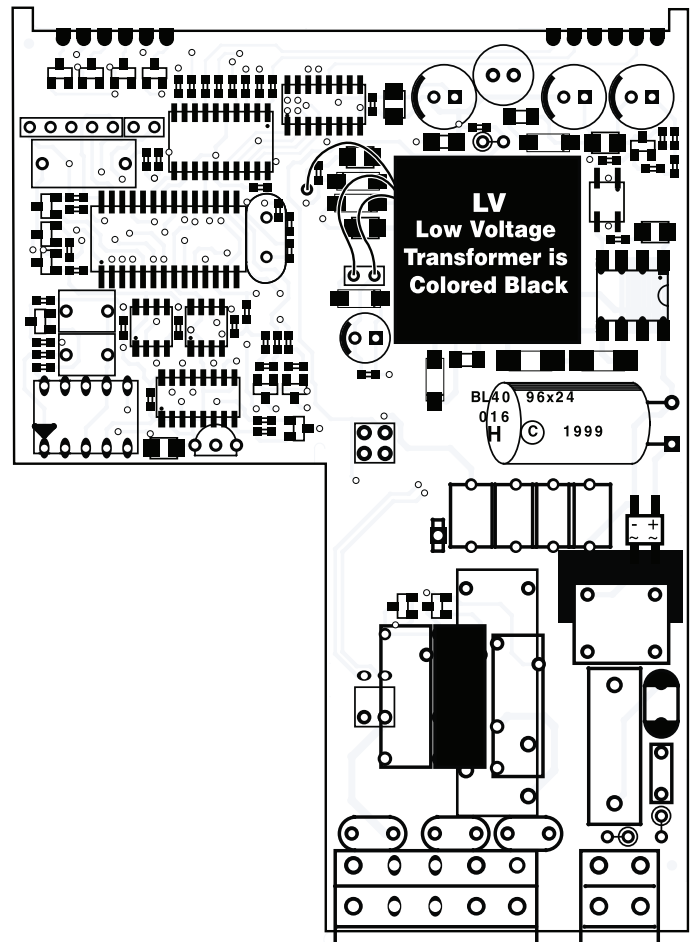**Analog Output Selection Header**

0 to 10 V DC Selection Position

Optional Analog Output Module

Display Board Front View

PS1 High Voltage Main Board

HV
High Voltage Transformer is Colored Grey

BL40 96x24
016
H (C) 1999

PS2 Low Voltage Main Board

LV
Low Voltage Transformer is Colored Black

BL40 96x24
016
H (C) 1999

Symbols Indicate Module Compatibility Within Meter Families

TIGER Family	TIGER Family	TIGER Family
LEOPARD Family	LEOPARD Family	LEOPARD Family
LYNX Family	LYNX Family	LYNX Family
ALL MODELS	**SOME MODELS**	**MODEL SPECIFIC**

Unless otherwise specified Texmate will ship all modules pre-calibrated with factory preselected ranges and/or scalings as shown in **BOLD** type. Other pre-calibrated standard ranges or custom ranges may be ordered. Factory installed custom scaling and other custom options are also available (see Ordering Information, Special Options on last page).
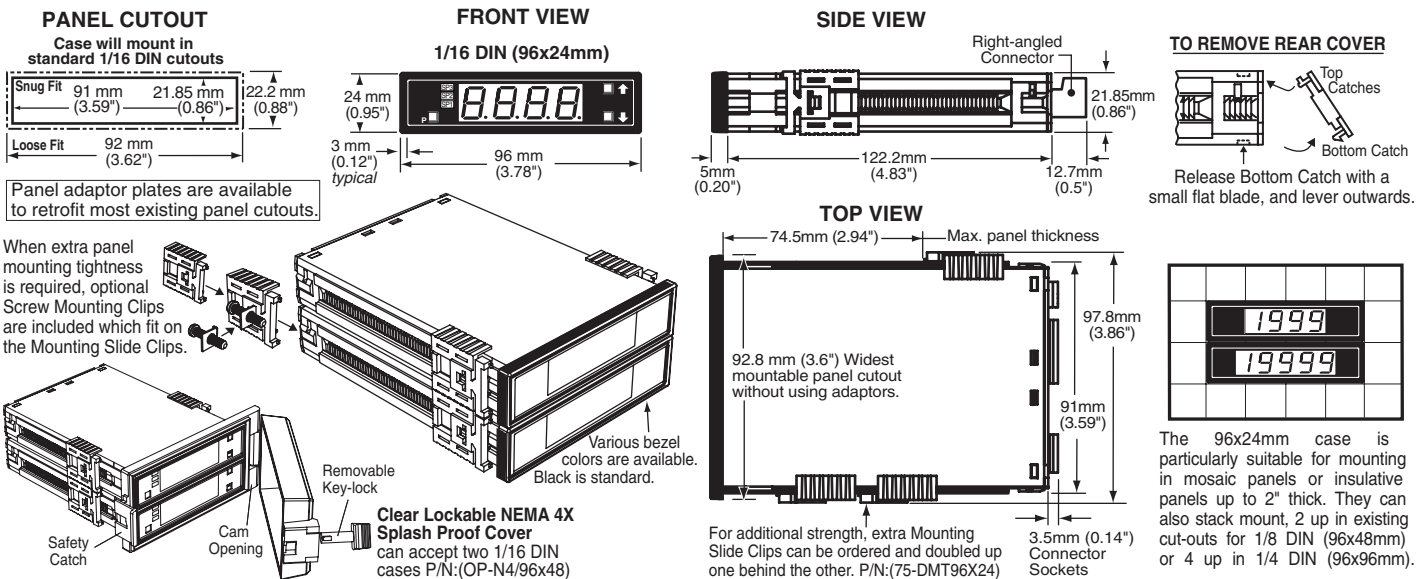
IF05: Universal Frequency / RPM

Using NPN Open Collector Proximity Switch

330B

LEOPARD

BL-40F
BL-40RPM
DL-40F
DL-40RPM

High Accuracy Digital Measurement

INPUT — PIN 1
+24V — PIN 2
GND — PIN 3

NPN
Open Collector
Proximity Switch

Normally Pin 1 is at 24V
When sensor is activated Pin 1 goes to 0V
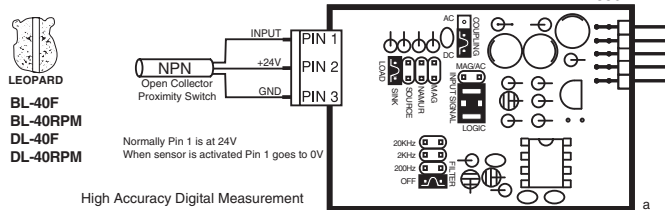
WARNING: AC and DC input signals and power supply voltages can be hazardous. Do Not insert, remove or handle modules with live wires connected to any terminal plugs.
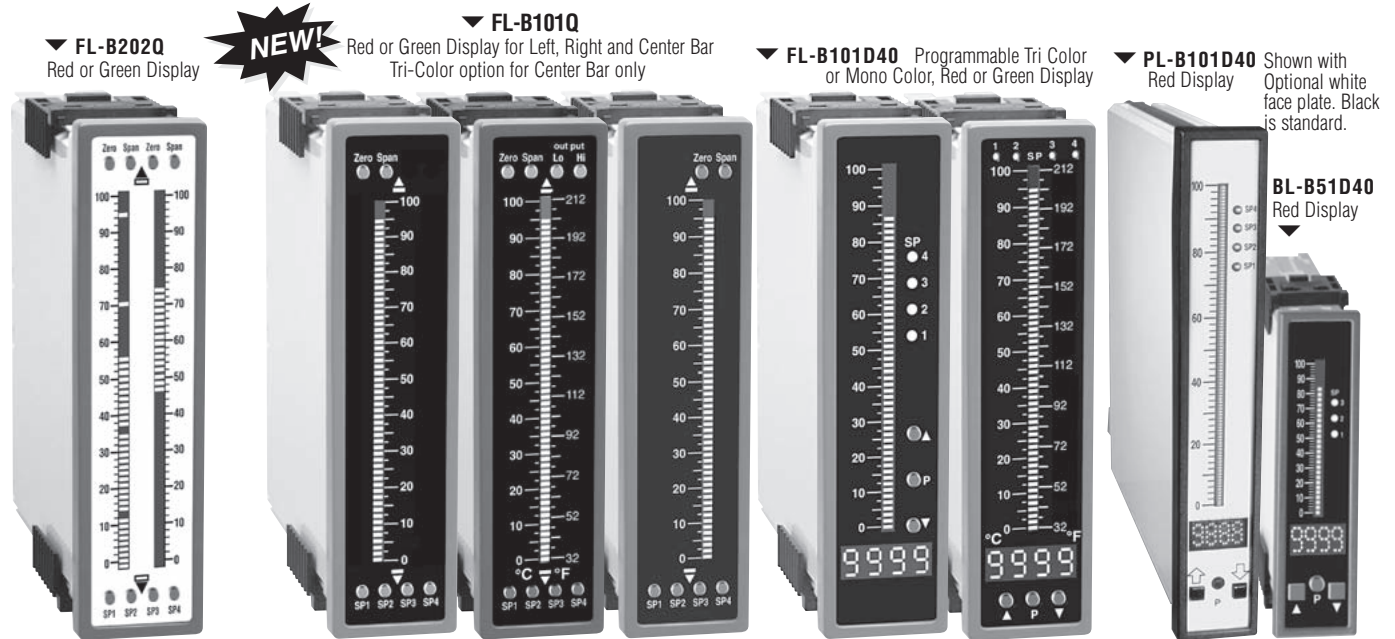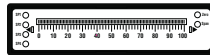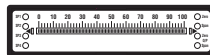
Case Dimensions

PANEL CUTOUT
Case will mount in standard 1/16 DIN cutouts

Snug Fit: 91 mm (3.59") — 21.85 mm (0.86") — 22.2 mm (0.88")

Loose Fit: 92 mm (3.62")

Panel adaptor plates are available to retrofit most existing panel cutouts.

When extra panel mounting tightness is required, optional Screw Mounting Clips are included which fit on the Mounting Slide Clips.

Safety Catch

Cam Opening

Removable Key-lock

Clear Lockable NEMA 4X Splash Proof Cover can accept two 1/16 DIN cases P/N:(OP-N4/96x48)

FRONT VIEW
1/16 DIN (96x24mm)

24 mm (0.95")
3 mm (0.12") typical
96 mm (3.78")

Various bezel colors are available. Black is standard.

SIDE VIEW

Right-angled Connector

21.85mm (0.86")

5mm (0.20")
122.2mm (4.83")
12.7mm (0.5")

TOP VIEW

74.5mm (2.94") — Max. panel thickness

92.8 mm (3.6") Widest mountable panel cutout without using adaptors.

97.8mm (3.86")
91mm (3.59")
3.5mm (0.14") Connector Sockets

For additional strength, extra Mounting Slide Clips can be ordered and doubled up one behind the other. P/N:(75-DMT96X24)

TO REMOVE REAR COVER

Top Catches
Bottom Catch

Release Bottom Catch with a small flat blade, and lever outwards.

1999
19999

The 96x24mm case is particularly suitable for mounting in mosaic panels or insulative panels up to 2" thick. They can also stack mount, 2 up in existing cut-outs for 1/8 DIN (96x48mm) or 4 up in 1/4 DIN (96x96mm).

INTERNATIONAL
DIN
CASES
1/32
1/32 1/8

Leopard Family Meters and Bargraphs

Smart, Programmable Bargraph Relays with Isolated 16 Bit 4-20 mA or 0-10 V Outputs

▼ **FL-B202Q**
Red or Green Display

NEW!

▼ **FL-B101Q**
Red or Green Display for Left, Right and Center Bar
Tri-Color option for Center Bar only

▼ **FL-B101D40** Programmable Tri Color
or Mono Color, Red or Green Display

▼ **PL-B101D40** Shown with
Red Display Optional white
face plate. Black
is standard.

BL-B51D40
Red Display
▼

9/64 DIN 36x144 mm (1.42"x5.69")

3/32 DIN
24x144 mm
(0.95"x5.69")

1/16 DIN
24x96 mm
(0.95"x3.78")

LEOPARD FAMILY FEATURES

- Smart 4 digit meters, tricolor and mono-color bargraphs
- Front-panel digital scaling, offset, and setpoints
- Bargraph can be independently scaled to a sensitivity of 100 counts full scale within any portion of the digital scale
- Over 38 different I-Series Input Signal Conditioners. For more info, please refer to the "I-Series Input Signal Conditioning Modules" catalog.
- 24 V DC excitation is available to power external 4-20 mA transmitters and 5 or 10 V DC excitation is available for resistance bridge type sensors
- Dual 10 & 5-amp relays, 4 relays total plus 16-bit analog output
- 1/16 DIN meters have one 10 Amp relay or two 5 Amp relays plus 16-bit analog output or an extra 5 Amp relay
- Auto-sensing AC/DC, wide range power supplies, 85-265 V AC / 95-370 V DC or 18-36 V AC / 9-60 V DC
- Quick, easy mounting into any panel thickness
- Direct flush mount into mosaic panels
- Optional NEMA 4X membrane touch screen face plates
- Optional NEMA 4X, IP65 clear polycarbonate lens covers
- Optional metal surround case for DL and FL meters.
- Standard plug-in screw terminal connectors are provided

▲ **FL-B101D40PS with horizontal face plate option**
Programmable Tri Color or Mono Color, Red or Green Display

▲ **FL-B202Q horizontal face plate option**
Red or Green Display

NEW!

BL-40 ▶

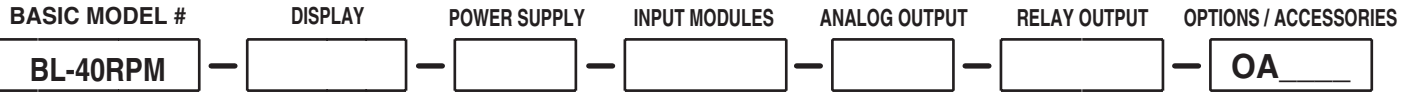▲ **DL-40 w/0.8" display option**

▲ **DL-40 Water Proof Membrane Touch-pad Option**

▲ **DL-40**

Ordering Information

BASIC MODEL #	DISPLAY	POWER SUPPLY	INPUT MODULES	ANALOG OUTPUT	RELAY OUTPUT	OPTIONS / ACCESSORIES
BL-40RPM —		—	—	—	—	OA____

Add to the basic model number the order code suffix for each standard option required. The last suffix is to indicate how many different special options and or accessories that you may require to be included with this product.

Ordering Example: BL-40RPM-DR-PS1-IF07-OIC-R1-OA2, the 2 OA's are, CR-CHANGE and a 75-DMT96X24

▶**BASIC MODEL NUMBER**
BL-40RPM . 96x24mm, Leopard, 4 Digit RPM Meter

Standard Options for this Model Number

Order Code Suffix   Description

▶**DISPLAY**
DR . . Red LED, 0.56 inch high
DB . . . . Super–bright Red LED, 0.56 inch high
DG . . . . Green LED, 0.56 inch high

▶**POWER SUPPLY**
PS1 . 85 - 265VAC / 95 - 370VDC
PS2 . . . 18 - 48VAC / 10 - 72VDC

▶ **INPUT MODULES (Partial List. See www.texmate.com)**

Unless otherwise specified Texmate will ship all modules precalibrated with factory preselected ranges and/or scalings as shown in **BOLD** type.

IF05. . . . Universal Frequency/RPM

▶**ANALOG OUTPUT***
OIC . . . . Isolated analog 4-20mA (with a Max. Two-5A Form A Relays)
OIV . . . . Isolated analog 0-10VDC (with a Max. Two-5A Form A Relays)
*Note: When either of the Analog Output options is installed, only the R1, R2 and R11 Relay Output options can be co-installed (see below).

▶**RELAY OUTPUT**
R1 . . . Single 5A Form A Relay
R2 . . . Dual 5A Form A Relays
R3 . . . Three 5A Form A Relays; SP1 & SP2 common**
R11 . . Single 10A Form C Relay
R16 . . Single 10A Form C & Single 5A Form A Relays**
**R3 & R16 cannot be co-installed with Analog Output options.

Special Options and Accessories (OA's)

Part Number   Description

▶**SPECIAL OPTIONS (Specify Inputs or Outputs & Req. Reading)**
CR-CHANGE. . . . . . Calibrated Range Change to another Standard Range
CS-L/40 . . . . Custom Scaling within any Stnd. or Custom Selectable Range
CSR-L/40 . . . . Custom Selectable Range Installation or Modification
CSS-L/40 . . . . Custom Special Scaling beyond the Standard Range
COA-L/SINGLE. . . . Custom Output - Special Scaling of Analog Output
COR-L/RELAY . . . . . Custom Output - Relays Installed in Non-Standard Locations
CCP-L/SETUP. . . . . NRC to Set-up Custom Configuration - Functions, Codes
CCP-L/INSTL . . . . . Factory Installation - Custom Configuration

▶**ACCESSORIES (Specify Serial # for Custom Artwork Installation)**
75-DMT96X24 . . . . . Side Slide Brackets (2 pc) - extra set, extra strength
75-DBBZ96X24. . . . . Extra Black Bezel for 96x24mm Case
ART-FS-S/D/C . . . . . NRC for artwork & set-up Faceplate/Desc/Co.Logo
ART-FS-S/D . . . . . . NRC for artwork & set-up Faceplate/Desc
ART-FS-001 . . . . . . Install Custom Faceplate per meter - 1 color
93-PLUG2P-DP . . . . Extra Screw Terminal Conn., 2 Pin Power Plug
93-PLUG2P-DR . . . . Extra Screw Terminal Conn., 2 Pin Plug
93-PLUG3P-DR . . . . Extra Screw Terminal Conn., 3 Pin Plug
93-PLUG4P-DR . . . . Extra Screw Terminal Conn., 4 Pin Plug
DN.CAS96X24L . . . . Extra Complete 96x24mm Case with bezel
OP-MTLCLIP. . . . . . . Screw Mounting Clips (2 pc) to screw tighten slide brackets
75-DTP96X24 . . . . . . Black Metal Trim Plate (96x24mm Case) 1 Meter
75-DTP2X9624 . . . . . Black Metal Trim Plate (96x24mm Case) 2 Meters
75-DTP3X9624 . . . . . Black Metal Trim Plate (96x24mm Case) 3 Meters

Many other options and accessories are available. See full price list for more details.

Prices subject to change without notice.

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Fax: 1-760-598-9828 • Email: sales@texmate.com • Web: www.texmate.com

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
Local Distributor Address