DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
- Input-Output Accuracy: +/-0.2% of Reading

DESCRIPTION

OTEK the innovator and leader of **Loop Powered** Instruments brings you another World's First! The **LPT** (**L**oop **P**owered RF **T**ransceiver) is a Pat. Pending system that combines the reliable 4-20mA current loop and wireless technologies. No more wires, conduits, safety barriers and expensive certifications. Just plug in your transmitter's output loop into the **LPT**, connect power to the receiver (**RX**) and the loop output to your (or our) indicator/controller and ... that's it!

How It Works: We use the input 4-20 (or 10-50) mA input to charge a **Super Cap** controlled by a ?C. We monitor the loop current to measure its value and determine the transmission rate, when not transmitting, we charge the cap so at high loop current we transmit more often and less at low current. If the input loop stays low too long, we enable the battery to transmit and **warn** you of battery powered operation.

The Transmitter: Two types are offered; the **100%** 2 wire **Loop Powered** and the **VDC** powered. The **Loop Powered** uses only 2 wires (+ and - Loop) and every cycle of capacitor charge you will see a fast "SAG" on your transmitter voltage (not current) due to impedance change. This would only affect you if you have other loads in series with your 4-20mA transmitter and the **LPT**. If you **must** have continuous transmission, not depending on the cap charge cycle (up to 1 second) or the "SAG" will affect you, use the VDC powered versions. Your **LPT** loop powered **TX** is shipped with the battery disconnected. Before connecting your loop, press the reset (R) switch by the connector, then connect your + and - loop to terminals 1 and 2 respectively, short out terminals 2 and 3 to enable the battery and disconnect when not in use or during shipping. The battery will "Jump Start" the **TX** when loops are low or on start up.

On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

Other OTEK Loop Products:

LPI: Loop Powered Isolator
LPM: Loop Powered LCD DPM
LPE: Loop Powred LED DPM
LBD: Loop Powered LCD Bargraph
LPB: Loop Powered LED Bargraph
420: Loop Calibrator (Transmitter)
900: Loop Powered Controller
LSB: Loop Powered LCD Bargraph
521: Loop Powered LCD DPM
HI-Q Series: Tricolor Bargraph
NQL: Nuclear Qualified
ACL: A.C. Signal In, Loop Out
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MADE IN USA

DISCONTINUED!!!!!!!!!!!!!!!!!

The Receivers: Since the **RX** must have continuous power for the **RF-RX**, the **LPT RX** requires 3 wires: + Loop Out (Pin 1) and + power (10-28VDC plus your load and line loss), ground (Pin 2) and - loop out (Pin 3). The **RX** "Load" is **NOT** referenced to ground, but to + **VDC**. If you need it isolated or referenced to ground see our LPI.

The green **LED** indicates "Power On" and the red, alarm. If the red **LED** is off, **AOK**. If blinking = TX is running on battery back-up power or loop is very low. If steady red = no reception due to interference or TX problems.

4-20mA Output Adjustments: Your **LPT-RX** has 2 potentiometers. The "**Z**" (on the left) = Zero (4mA) and the "**S**" (on the right) = Span (20mA). Always adjust "**Z**" before "**S**" and repeat if necessary. "**Z**" has narrow range.

Calibration: With the **LPT - TX** transmitting at 20mA make sure the **LPT-RX** is updating itself. If not (steady Red LED), correct the problem (distance or blockage or power). If no changes were made to factory calibration, the **LPT-RX** should output 20mA. Switch your 4-20mA transmitter to 4mA, the **LPT-RX** should output 4mA. If ok, check at 8 and 16mA for accuracy and linearity. DON'T FORGET that (If Loop Powered) at low input currents (ie. 4mA) your **LPT-TX** will take about 5 seconds to update the output of the RX, so be patient. If not within specifications, transmit 4mA and adjust **RX's** "**Z**" for 4mA output, check 2-3 readings. Transmit 20mA at TX and adjust "**S**" on **RX** for 20mA output. Check for 4, 8, 12, 16 and 20mA I/O. **OTEK's** model "**420**" **Portable 4-20mA Calibrator** will be ideal for calibration and set-up without disturbing your loop.

NOTE: If your process runs at low (4mA) loop current >50% of the time, the **LPT-TX** will drain the battery in about 48 hours. So always have spare #2032 Lithium Battery. Just snap the halves with a small screw driver, slide the old battery out and insert the new (negative to the P.C.B.) or use the externally powered version.

ORDERING INFORMATION 10-06-08

Model: LPT - [1] [2] [3]

GRADE (1)
- I ..... Industrial
- N ..... Nuclear Qualified
- M ..... Mil-Spec Qualified
- S ..... Intrinsically Safe

R.F. Bandwidth (2)
- 0 ..... 902-928MHz
- 9 ..... Custom (Specify)

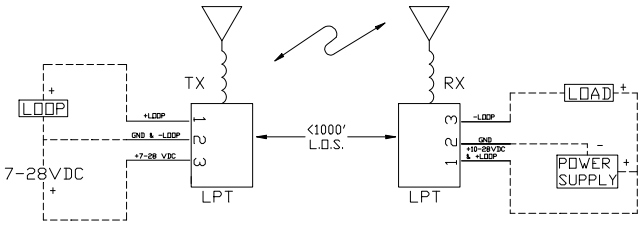
FUNCTION (3)
- 0 ..... TX, 4-20mA In, Loop Powered
- 1 ..... TX, 4-20mA In, 5VDC Power
- 2 ..... TX, 4-20mA In, 7-28VDC Power
- 3 ..... RX, RL ≤700 Ohms 4-20mA Out
- 9 ..... Custom (Specify)

Note: If you need your load isolated or referenced to ground, see our LPI (Loop Powered Isolator).

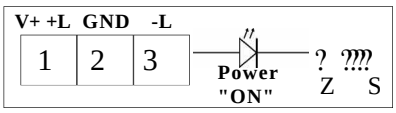
NOTES:
1. Contact **OTEK** for N, M & S Versions. I.S. By Design. No Certificate Available Until Further Notice.
2. Only 902-928MHz For USA Per **FCC 15.247.** Other Bandwidths (315-868MHz) Only For Export And Requires An Affidavit Of **Export Only,** Or Order Will Be Refused. Use #9 and Specify Frequency (ie: 315, 433, 868MHz).
3. On **RX** Option **3** can drive up to 700 Ohms Load @ 20mA and 24VDC power. See Note Under Connections.
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power

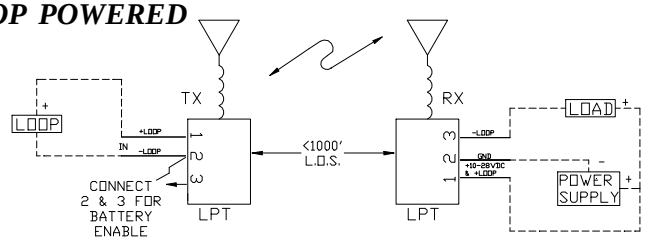


LPT RX

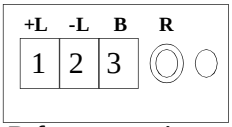


Note: Receiver requires minimum of 8.5V compliance plus your load and line loss.

LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
- Input-Output Accuracy: +/-0.2% of Reading

DESCRIPTION

OTEK the innovator and leader of **Loop Powered** Instruments brings you another World's First! The **LPT** (**L**oop **P**owered RF **T**ransceiver) is a Pat. Pending system that combines the reliable 4-20mA current loop and wireless technologies. No more wires, conduits, safety barriers and expensive certifications. Just plug in your transmitter's output loop into the **LPT**, connect power to the receiver (**RX**) and the loop output to your (or our) indicator/controller and ... that's it!

How It Works: We use the input 4-20 (or 10-50) mA input to charge a **Super Cap** controlled by a ?C. We monitor the loop current to measure its value and determine the transmission rate, when not transmitting, we charge the cap so at high loop current we transmit more often and less at low current. If the input loop stays low too long, we enable the battery to transmit and **warn** you of battery powered operation.

The Transmitter: Two types are offered; the **100%** 2 wire **Loop Powered** and the **VDC** powered. The **Loop Powered** uses only 2 wires (+ and - Loop) and every cycle of capacitor charge you will see a fast "SAG" on your transmitter voltage (not current) due to impedance change. This would only affect you if you have other loads in series with your 4-20mA transmitter and the **LPT**. If you **must** have continuous transmission, not depending on the cap charge cycle (up to 1 second) or the "SAG" will affect you, use the VDC powered versions. Your **LPT** loop powered **TX** is shipped with the battery disconnected. Before connecting your loop, press the reset (R) switch by the connector, then connect your + and - loop to terminals 1 and 2 respectively, short out terminals 2 and 3 to enable the battery and disconnect when not in use or during shipping. The battery will "Jump Start" the **TX** when loops are low or on start up.

On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

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DISCONTINUED!!!!!!!!!!!!!!!!!

The Receivers: Since the **RX** must have continuous power for the **RF-RX**, the **LPT RX** requires 3 wires: + Loop Out (Pin 1) and + power (10-28VDC plus your load and line loss), ground (Pin 2) and - loop out (Pin 3). The **RX** "Load" is **NOT** referenced to ground, but to + **VDC**. If you need it isolated or referenced to ground see our LPI.

The green **LED** indicates "Power On" and the red, alarm. If the red **LED** is off, **AOK**. If blinking = TX is running on battery back-up power or loop is very low. If steady red = no reception due to interference or TX problems.

4-20mA Output Adjustments: Your **LPT-RX** has 2 potentiometers. The "**Z**" (on the left) = Zero (4mA) and the "**S**" (on the right) = Span (20mA). Always adjust "**Z**" before "**S**" and repeat if necessary. "**Z**" has narrow range.

Calibration: With the **LPT - TX** transmitting at 20mA make sure the **LPT-RX** is updating itself. If not (steady Red LED), correct the problem (distance or blockage or power). If no changes were made to factory calibration, the **LPT-RX** should output 20mA. Switch your 4-20mA transmitter to 4mA, the **LPT-RX** should output 4mA. If ok, check at 8 and 16mA for accuracy and linearity. DON'T FORGET that (If Loop Powered) at low input currents (ie. 4mA) your **LPT-TX** will take about 5 seconds to update the output of the RX, so be patient. If not within specifications, transmit 4mA and adjust **RX's** "**Z**" for 4mA output, check 2-3 readings. Transmit 20mA at TX and adjust "**S**" on **RX** for 20mA output. Check for 4, 8, 12, 16 and 20mA I/O. **OTEK's** model "**420**" **Portable 4-20mA Calibrator** will be ideal for calibration and set-up without disturbing your loop.

NOTE: If your process runs at low (4mA) loop current >50% of the time, the **LPT-TX** will drain the battery in about 48 hours. So always have spare #2032 Lithium Battery. Just snap the halves with a small screw driver, slide the old battery out and insert the new (negative to the P.C.B.) or use the externally powered version.

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R.F. Bandwidth (2)
- 0 ..... 902-928MHz
- 9 ..... Custom (Specify)

FUNCTION (3)
- 0 ..... TX, 4-20mA In, Loop Powered
- 1 ..... TX, 4-20mA In, 5VDC Power
- 2 ..... TX, 4-20mA In, 7-28VDC Power
- 3 ..... RX, RL ≤700 Ohms 4-20mA Out
- 9 ..... Custom (Specify)

Note: If you need your load isolated or referenced to ground, see our LPI (Loop Powered Isolator).

NOTES:
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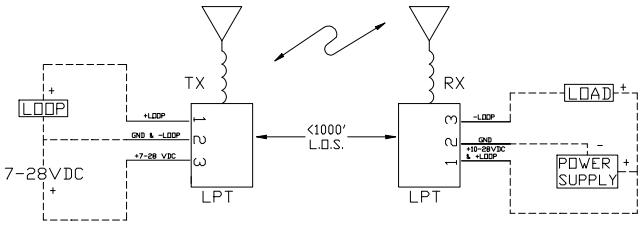
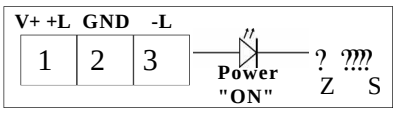
3. On **RX** Option **3** can drive up to 700 Ohms Load @ 20mA and 24VDC power. See Note Under Connections.
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power

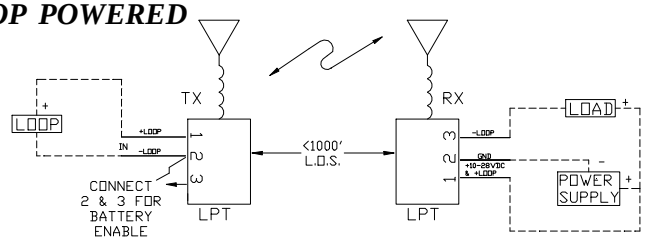


LPT RX

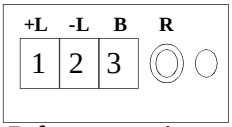


Note: Receiver requires minimum of 8.5V compliance plus your load and line loss.

LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
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- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
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- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
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On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

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The green **LED** indicates "Power On" and the red, alarm. If the red **LED** is off, **AOK**. If blinking = TX is running on battery back-up power or loop is very low. If steady red = no reception due to interference or TX problems.

4-20mA Output Adjustments: Your **LPT-RX** has 2 potentiometers. The "**Z**" (on the left) = Zero (4mA) and the "**S**" (on the right) = Span (20mA). Always adjust "**Z**" before "**S**" and repeat if necessary. "**Z**" has narrow range.

Calibration: With the **LPT - TX** transmitting at 20mA make sure the **LPT-RX** is updating itself. If not (steady Red LED), correct the problem (distance or blockage or power). If no changes were made to factory calibration, the **LPT-RX** should output 20mA. Switch your 4-20mA transmitter to 4mA, the **LPT-RX** should output 4mA. If ok, check at 8 and 16mA for accuracy and linearity. DON'T FORGET that (If Loop Powered) at low input currents (ie. 4mA) your **LPT-TX** will take about 5 seconds to update the output of the RX, so be patient. If not within specifications, transmit 4mA and adjust **RX's** "**Z**" for 4mA output, check 2-3 readings. Transmit 20mA at TX and adjust "**S**" on **RX** for 20mA output. Check for 4, 8, 12, 16 and 20mA I/O. **OTEK's** model "**420**" **Portable 4-20mA Calibrator** will be ideal for calibration and set-up without disturbing your loop.

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NOTES:
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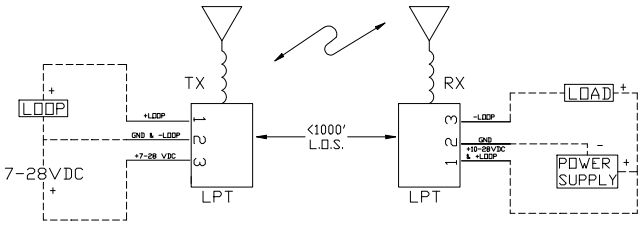
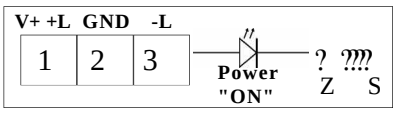
2. Only 902-928MHz For USA Per **FCC 15.247.** Other Bandwidths (315-868MHz) Only For Export And Requires An Affidavit Of **Export Only,** Or Order Will Be Refused. Use #9 and Specify Frequency (ie: 315, 433, 868MHz).
3. On **RX** Option **3** can drive up to 700 Ohms Load @ 20mA and 24VDC power. See Note Under Connections.
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power

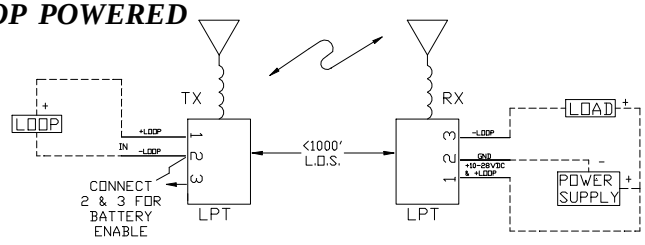


LPT RX

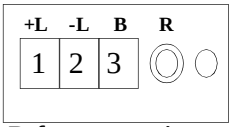


Note: Receiver requires minimum of 8.5V compliance plus your load and line loss.

LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
- Input-Output Accuracy: +/-0.2% of Reading

DESCRIPTION

OTEK the innovator and leader of **Loop Powered** Instruments brings you another World's First! The **LPT** (**L**oop **P**owered RF **T**ransceiver) is a Pat. Pending system that combines the reliable 4-20mA current loop and wireless technologies. No more wires, conduits, safety barriers and expensive certifications. Just plug in your transmitter's output loop into the **LPT**, connect power to the receiver (**RX**) and the loop output to your (or our) indicator/controller and ... that's it!

How It Works: We use the input 4-20 (or 10-50) mA input to charge a **Super Cap** controlled by a ?C. We monitor the loop current to measure its value and determine the transmission rate, when not transmitting, we charge the cap so at high loop current we transmit more often and less at low current. If the input loop stays low too long, we enable the battery to transmit and **warn** you of battery powered operation.

The Transmitter: Two types are offered; the **100%** 2 wire **Loop Powered** and the **VDC** powered. The **Loop Powered** uses only 2 wires (+ and - Loop) and every cycle of capacitor charge you will see a fast "SAG" on your transmitter voltage (not current) due to impedance change. This would only affect you if you have other loads in series with your 4-20mA transmitter and the **LPT**. If you **must** have continuous transmission, not depending on the cap charge cycle (up to 1 second) or the "SAG" will affect you, use the VDC powered versions. Your **LPT** loop powered **TX** is shipped with the battery disconnected. Before connecting your loop, press the reset (R) switch by the connector, then connect your + and - loop to terminals 1 and 2 respectively, short out terminals 2 and 3 to enable the battery and disconnect when not in use or during shipping. The battery will "Jump Start" the **TX** when loops are low or on start up.

On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

Other OTEK Loop Products:

LPI: Loop Powered Isolator
LPM: Loop Powered LCD DPM
LPE: Loop Powred LED DPM
LBD: Loop Powered LCD Bargraph
LPB: Loop Powered LED Bargraph
420: Loop Calibrator (Transmitter)
900: Loop Powered Controller
LSB: Loop Powered LCD Bargraph
521: Loop Powered LCD DPM
HI-Q Series: Tricolor Bargraph
NQL: Nuclear Qualified
ACL: A.C. Signal In, Loop Out
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MADE IN USA

DISCONTINUED!!!!!!!!!!!!!!!!!

The Receivers: Since the **RX** must have continuous power for the **RF-RX**, the **LPT RX** requires 3 wires: + Loop Out (Pin 1) and + power (10-28VDC plus your load and line loss), ground (Pin 2) and - loop out (Pin 3). The **RX** "Load" is **NOT** referenced to ground, but to + **VDC**. If you need it isolated or referenced to ground see our LPI.

The green **LED** indicates "Power On" and the red, alarm. If the red **LED** is off, **AOK**. If blinking = TX is running on battery back-up power or loop is very low. If steady red = no reception due to interference or TX problems.

4-20mA Output Adjustments: Your **LPT-RX** has 2 potentiometers. The "**Z**" (on the left) = Zero (4mA) and the "**S**" (on the right) = Span (20mA). Always adjust "**Z**" before "**S**" and repeat if necessary. "**Z**" has narrow range.

Calibration: With the **LPT - TX** transmitting at 20mA make sure the **LPT-RX** is updating itself. If not (steady Red LED), correct the problem (distance or blockage or power). If no changes were made to factory calibration, the **LPT-RX** should output 20mA. Switch your 4-20mA transmitter to 4mA, the **LPT-RX** should output 4mA. If ok, check at 8 and 16mA for accuracy and linearity. DON'T FORGET that (If Loop Powered) at low input currents (ie. 4mA) your **LPT-TX** will take about 5 seconds to update the output of the RX, so be patient. If not within specifications, transmit 4mA and adjust **RX's** "**Z**" for 4mA output, check 2-3 readings. Transmit 20mA at TX and adjust "**S**" on **RX** for 20mA output. Check for 4, 8, 12, 16 and 20mA I/O. **OTEK's** model "**420**" **Portable 4-20mA Calibrator** will be ideal for calibration and set-up without disturbing your loop.

NOTE: If your process runs at low (4mA) loop current >50% of the time, the **LPT-TX** will drain the battery in about 48 hours. So always have spare #2032 Lithium Battery. Just snap the halves with a small screw driver, slide the old battery out and insert the new (negative to the P.C.B.) or use the externally powered version.

ORDERING INFORMATION 10-06-08

Model: LPT - [1] [2] [3]

GRADE (1)
- I ..... Industrial
- N ..... Nuclear Qualified
- M ..... Mil-Spec Qualified
- S ..... Intrinsically Safe

R.F. Bandwidth (2)
- 0 ..... 902-928MHz
- 9 ..... Custom (Specify)

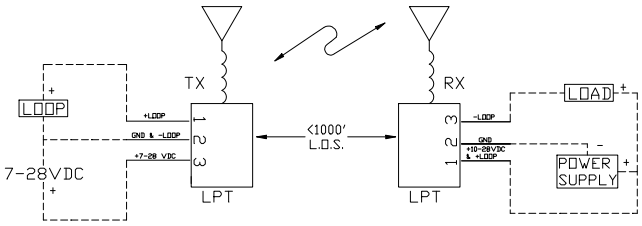
FUNCTION (3)
- 0 ..... TX, 4-20mA In, Loop Powered
- 1 ..... TX, 4-20mA In, 5VDC Power
- 2 ..... TX, 4-20mA In, 7-28VDC Power
- 3 ..... RX, RL ≤700 Ohms 4-20mA Out
- 9 ..... Custom (Specify)

Note: If you need your load isolated or referenced to ground, see our LPI (Loop Powered Isolator).

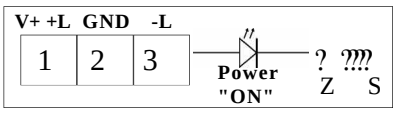
NOTES:
1. Contact **OTEK** for N, M & S Versions. I.S. By Design. No Certificate Available Until Further Notice.
2. Only 902-928MHz For USA Per **FCC 15.247.** Other Bandwidths (315-868MHz) Only For Export And Requires An Affidavit Of **Export Only,** Or Order Will Be Refused. Use #9 and Specify Frequency (ie: 315, 433, 868MHz).
3. On **RX** Option **3** can drive up to 700 Ohms Load @ 20mA and 24VDC power. See Note Under Connections.
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power

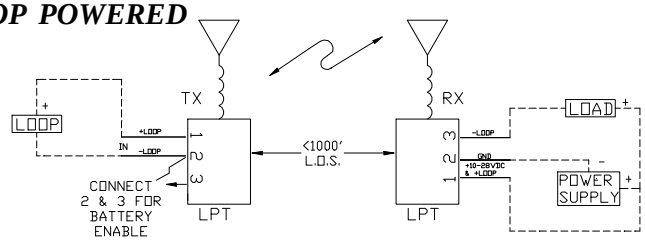


LPT RX

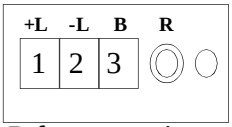


Note: Receiver requires minimum of 8.5V compliance plus your load and line loss.

LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
- Input-Output Accuracy: +/-0.2% of Reading

DESCRIPTION

OTEK the innovator and leader of **Loop Powered** Instruments brings you another World's First! The **LPT** (**L**oop **P**owered RF **T**ransceiver) is a Pat. Pending system that combines the reliable 4-20mA current loop and wireless technologies. No more wires, conduits, safety barriers and expensive certifications. Just plug in your transmitter's output loop into the **LPT**, connect power to the receiver (**RX**) and the loop output to your (or our) indicator/controller and ... that's it!

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The Transmitter: Two types are offered; the **100%** 2 wire **Loop Powered** and the **VDC** powered. The **Loop Powered** uses only 2 wires (+ and - Loop) and every cycle of capacitor charge you will see a fast "SAG" on your transmitter voltage (not current) due to impedance change. This would only affect you if you have other loads in series with your 4-20mA transmitter and the **LPT**. If you **must** have continuous transmission, not depending on the cap charge cycle (up to 1 second) or the "SAG" will affect you, use the VDC powered versions. Your **LPT** loop powered **TX** is shipped with the battery disconnected. Before connecting your loop, press the reset (R) switch by the connector, then connect your + and - loop to terminals 1 and 2 respectively, short out terminals 2 and 3 to enable the battery and disconnect when not in use or during shipping. The battery will "Jump Start" the **TX** when loops are low or on start up.

On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

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DISCONTINUED!!!!!!!!!!!!!!!!!

The Receivers: Since the **RX** must have continuous power for the **RF-RX**, the **LPT RX** requires 3 wires: + Loop Out (Pin 1) and + power (10-28VDC plus your load and line loss), ground (Pin 2) and - loop out (Pin 3). The **RX** "Load" is **NOT** referenced to ground, but to + **VDC**. If you need it isolated or referenced to ground see our LPI.

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- 1 ..... TX, 4-20mA In, 5VDC Power
- 2 ..... TX, 4-20mA In, 7-28VDC Power
- 3 ..... RX, RL ≤700 Ohms 4-20mA Out
- 9 ..... Custom (Specify)

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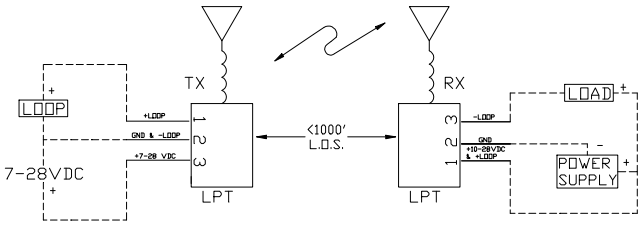
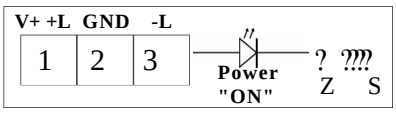
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power



LPT RX



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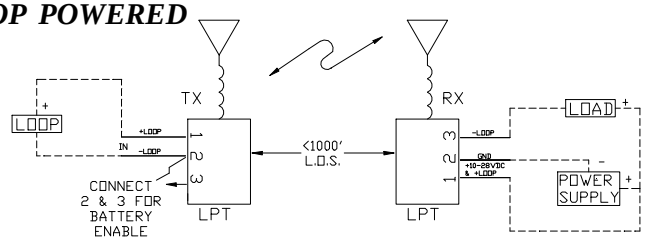
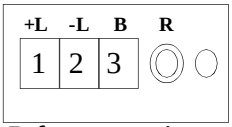
LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

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On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

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DISCONTINUED!!!!!!!!!!!!!!!!!

The Receivers: Since the **RX** must have continuous power for the **RF-RX**, the **LPT RX** requires 3 wires: + Loop Out (Pin 1) and + power (10-28VDC plus your load and line loss), ground (Pin 2) and - loop out (Pin 3). The **RX** "Load" is **NOT** referenced to ground, but to + **VDC**. If you need it isolated or referenced to ground see our LPI.

The green **LED** indicates "Power On" and the red, alarm. If the red **LED** is off, **AOK**. If blinking = TX is running on battery back-up power or loop is very low. If steady red = no reception due to interference or TX problems.

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Calibration: With the **LPT - TX** transmitting at 20mA make sure the **LPT-RX** is updating itself. If not (steady Red LED), correct the problem (distance or blockage or power). If no changes were made to factory calibration, the **LPT-RX** should output 20mA. Switch your 4-20mA transmitter to 4mA, the **LPT-RX** should output 4mA. If ok, check at 8 and 16mA for accuracy and linearity. DON'T FORGET that (If Loop Powered) at low input currents (ie. 4mA) your **LPT-TX** will take about 5 seconds to update the output of the RX, so be patient. If not within specifications, transmit 4mA and adjust **RX's** "**Z**" for 4mA output, check 2-3 readings. Transmit 20mA at TX and adjust "**S**" on **RX** for 20mA output. Check for 4, 8, 12, 16 and 20mA I/O. **OTEK's** model "**420**" **Portable 4-20mA Calibrator** will be ideal for calibration and set-up without disturbing your loop.

NOTE: If your process runs at low (4mA) loop current >50% of the time, the **LPT-TX** will drain the battery in about 48 hours. So always have spare #2032 Lithium Battery. Just snap the halves with a small screw driver, slide the old battery out and insert the new (negative to the P.C.B.) or use the externally powered version.

ORDERING INFORMATION 10-06-08

Model: LPT - [1] [2] [3]

GRADE (1)
- I ..... Industrial
- N ..... Nuclear Qualified
- M ..... Mil-Spec Qualified
- S ..... Intrinsically Safe

R.F. Bandwidth (2)
- 0 ..... 902-928MHz
- 9 ..... Custom (Specify)

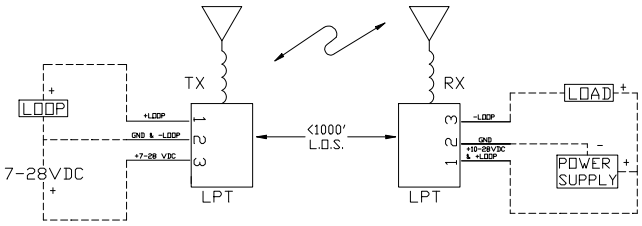
FUNCTION (3)
- 0 ..... TX, 4-20mA In, Loop Powered
- 1 ..... TX, 4-20mA In, 5VDC Power
- 2 ..... TX, 4-20mA In, 7-28VDC Power
- 3 ..... RX, RL ≤700 Ohms 4-20mA Out
- 9 ..... Custom (Specify)

Note: If you need your load isolated or referenced to ground, see our LPI (Loop Powered Isolator).

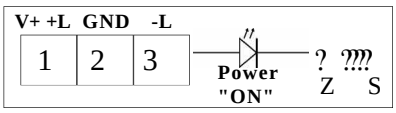
NOTES:
1. Contact **OTEK** for N, M & S Versions. I.S. By Design. No Certificate Available Until Further Notice.
2. Only 902-928MHz For USA Per **FCC 15.247.** Other Bandwidths (315-868MHz) Only For Export And Requires An Affidavit Of **Export Only,** Or Order Will Be Refused. Use #9 and Specify Frequency (ie: 315, 433, 868MHz).
3. On **RX** Option **3** can drive up to 700 Ohms Load @ 20mA and 24VDC power. See Note Under Connections.
4. The **LPT** is designed to mount on DIN Rail track or velcro mount in line with the input current loop. (Only 2.5 x 1.7 x 0.8")

EXTERNALLY POWERED CONNECTIONS

Note: No Battery Back-up with External Power

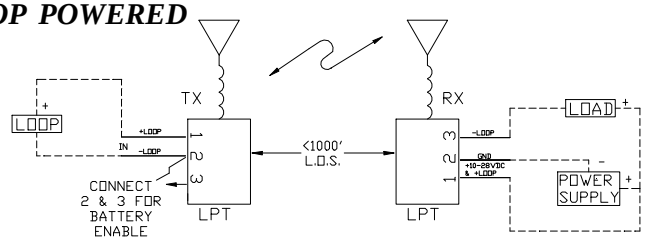


LPT RX

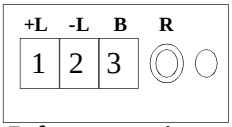


Note: Receiver requires minimum of 8.5V compliance plus your load and line loss.

LOOP POWERED



LPTX



Note: LPT TX has no adjustments

Note: Before connecting terminals 2 & 3 (Bat. enable) or after changing battery or if LPTX fails to transmit, press reset "R" switch momentarily.

DISCONTINUED!!!!!!!!!!!!!!!!!

NEW

WORLD'S FIRST LOOP POWERED (RF) TRANSMITTER

MODEL LPT (Pat. Pend.)

FEATURES:

- 4-20 Loop Powered or 5-24VDC Powered
- Open Loop Indication
- Broken Link Alarm
- Intelligent Transmission Rate vs. Input Loop Signal
- Battery Back-Up if Loop Fails
- Sudden Input Loop Change (Spike) Update
- Din Rail or Velcro Mount

SPECIFICATIONS @ 25ºC

TRANSMITTER: (Loop Powered)

- Burden: 6V@20mA; 4.5V@4mA
- Minimum Input: 3.6mA
- Maximum Input: 36mA
- TX Rate @ 20mA: 20/Sec
- TX Rate @4mA: 0.2/Sec
- RF Output Power: 1mW - 6mW
- Bandwidth: 902-928MHz (See Note 2)
- Battery Back-Up: #2032

Transmitter: (VDC Powered)

- Burden: 1V @ 20mA
- Minimum Input: 2mA
- Maximum Input: 36mA
- TX Rate: 9/Second
- Power Input @ 5VDC: 30mA

Receiver:

- Power Input: 10-28VDC @ 50mA
- Outputs: 4-20mA
- Load Res: 0-700 Ohms @ 24V, 0-100 Ohms @ 10V (See Note 3)

System:

- Update Rate: 200mS for 5V Powered. 50m Sec. for Loop Powered @ 20mA, 5 Sec. for Loop Powered @ 4mA
- Input-Output Accuracy: +/-0.2% of Reading

DESCRIPTION

OTEK the innovator and leader of **Loop Powered** Instruments brings you another World's First! The **LPT** (**L**oop **P**owered RF **T**ransceiver) is a Pat. Pending system that combines the reliable 4-20mA current loop and wireless technologies. No more wires, conduits, safety barriers and expensive certifications. Just plug in your transmitter's output loop into the **LPT**, connect power to the receiver (**RX**) and the loop output to your (or our) indicator/controller and ... that's it!

How It Works: We use the input 4-20 (or 10-50) mA input to charge a **Super Cap** controlled by a ?C. We monitor the loop current to measure its value and determine the transmission rate, when not transmitting, we charge the cap so at high loop current we transmit more often and less at low current. If the input loop stays low too long, we enable the battery to transmit and **warn** you of battery powered operation.

The Transmitter: Two types are offered; the **100%** 2 wire **Loop Powered** and the **VDC** powered. The **Loop Powered** uses only 2 wires (+ and - Loop) and every cycle of capacitor charge you will see a fast "SAG" on your transmitter voltage (not current) due to impedance change. This would only affect you if you have other loads in series with your 4-20mA transmitter and the **LPT**. If you **must** have continuous transmission, not depending on the cap charge cycle (up to 1 second) or the "SAG" will affect you, use the VDC powered versions. Your **LPT** loop powered **TX** is shipped with the battery disconnected. Before connecting your loop, press the reset (R) switch by the connector, then connect your + and - loop to terminals 1 and 2 respectively, short out terminals 2 and 3 to enable the battery and disconnect when not in use or during shipping. The battery will "Jump Start" the **TX** when loops are low or on start up.

On power up, the **LPT** will charge its "Super Cap" via the loop current and battery back-up, in about 10 seconds the green **LED** will come on steady and in about 20 more seconds it will start blinking (transmitting).

The **VDC Powered** requires 3 wires (+ loop, - loop/power ground and VDC@30ma). Remember that the **LPT** **must** share the same "-" power as "-" loop or use isolated power supply.

The **LPT** **TX** has two LEDs. The red (by the connector) indicates input loop "Power On" and the green (by the antenna) when it is transmitting (fast). VDC powered versions **DO NOT** have red power on LED, only the (transmitting) green.

Other OTEK Loop Products:

LPI: Loop Powered Isolator
LPM: Loop Powered LCD DPM
LPE: Loop Powred LED DPM
LBD: Loop Powered LCD Bargraph
LPB: Loop Powered LED Bargraph
420: Loop Calibrator (Transmitter)
900: Loop Powered Controller
LSB: Loop Powered LCD Bargraph
521: Loop Powered LCD DPM
HI-Q Series: Tricolor Bargraph
NQL: Nuclear Qualified
ACL: A.C. Signal In, Loop Out
CTT: C.T. Powered, Loop Out

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http://www.otekcorp.com

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SINCE 1974

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TUCSON, AZ. 85714 U.S.A.
MADE IN USA

DISCONTINUED!!!!!!!!!!!!!!!!!

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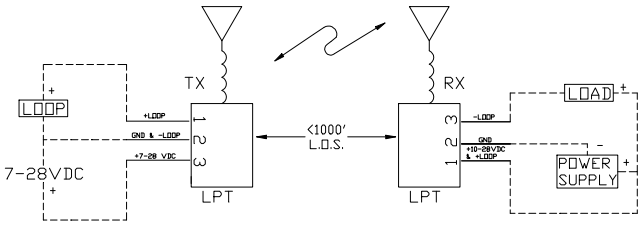
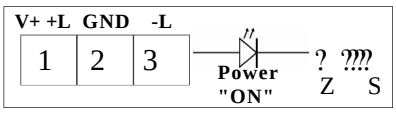


LPT RX



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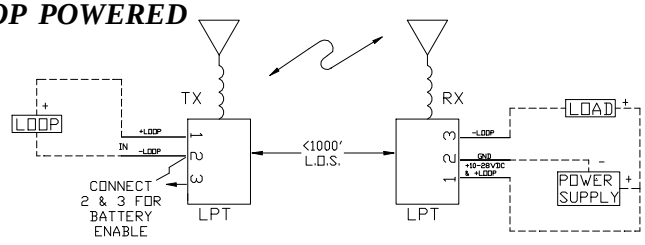
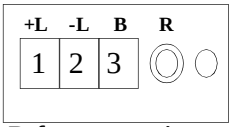


LPTX



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