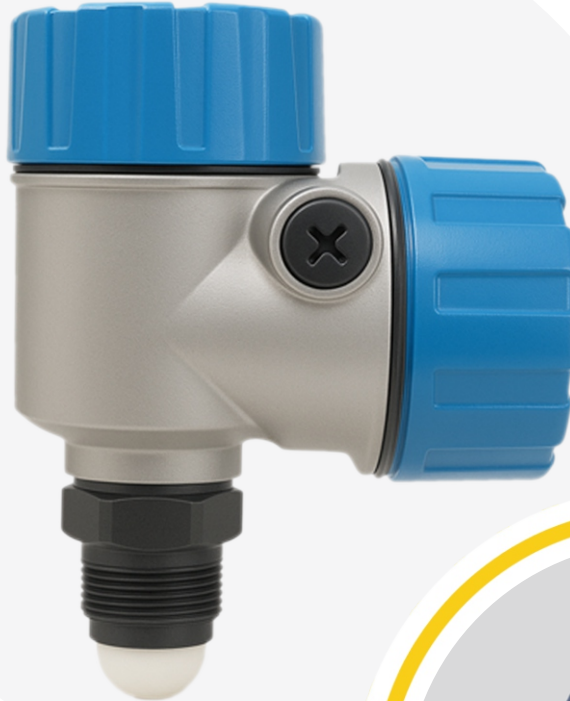


The Need For Every  
Process Industry

SPINK CONTROLS<sup>®</sup>

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# **RADAR LEVEL TRANSMITTER**

**MODEL: SC / L-150X**

The Radar uses an Frequency of 80GHz and works on Frequency Modulated Continuous Wave.

The FMCW Radar emits a high frequency signal whose frequency increases linearly during the measurement phase (called the frequency sweep). The signal is emitted, reflected from the measuring surface and received with a time delay,  $t$ . Delay time,  $t=2d/c$ , where  $d$  is the distance to the product surface and  $c$  is the speed of light in the gas above the product. For further signal processing the difference  $\Delta f$  is calculated from the actual transmit frequency and the receive frequency. The difference is directly proportional to the distance.

**LEVEL**

# ALL THE INFORMATION YOU NEED FOR YOUR NEXT RADAR

| Radar Model                             | SC / L-1501                              | SC / L-1502                                         | SC / L-1503L                                            | SC / L-1503S                                            |
|-----------------------------------------|------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| Application                             | Liquid / Slurries                        | Liquid / Slurries / Solids                          | Liquids / Slurries                                      | Liquid / Slurries / Solids                              |
| Range                                   | 0-10m (30m opt)                          | 0-10/15/20/40m                                      | 0-40m                                                   | 0-70/85/120m                                            |
| Opr. Frequency                          | 80 Ghz                                   | 80 Ghz                                              | 80 Ghz                                                  | 80 Ghz                                                  |
| Power Supply                            | 15 - 36VDC (2wire)                       | 15-36VDC (2 wire)                                   | 15 - 36VDC (2wire)                                      | 15 - 36VDC (2wire)                                      |
| Output                                  | 4-20mA (2 wire)                          | 4-20mA (2/4 wire) / RS485 Modbus                    | 4-20mA (2/4 wire) / RS485 Modbus                        | 4-20mA (2/4 wire) / RS485 Modbus                        |
| Accuracy                                | Upto $\pm 2$ mm                          | Upto $\pm 1$ mm                                     | Upto $\pm 1$ mm                                         | Upto $\pm 1$ mm                                         |
| Resolution                              | 1mm                                      | 1mm                                                 | 1mm                                                     | 1mm                                                     |
| Repeatability                           | Upto $\pm 1$ mm                          | Upto $\pm 1$ mm                                     | Upto $\pm 1$ mm                                         | Upto $\pm 1$ mm                                         |
| Opr. Temp.                              | -40°C to +80°C                           | -40°C to +100°C                                     | -40°C to +250°C (400°C /1200°C on Request)              | -40°C to +250°C (400°C /1200°C on Request)              |
| Opr. Pressure                           | -1 Bar to +2 Bar                         | -1Bar to +5Bar                                      | -10 Bar to +40 Bar                                      | -10 Bar to +40 Bar                                      |
| Configuration/ Zero and Span Adjustment | Bluetooth Android & iOS App              | HART 7.0/Display Keypad/Bluetooth Android & iOS App | HART 7.0 / Display Keypad / Bluetooth Android & iOS App | HART 7.0 / Display Keypad / Bluetooth Android & iOS App |
| Housing                                 | Aluminium / PP                           | Aluminium / SS316                                   | Aluminium / SS316                                       | Aluminium / SS316                                       |
| Sensor (Standard)                       | PP                                       | PTFE Lens Antenna +PVDF Connection.                 | PTFE Lens Antenna +PVDF / SS Conn.                      | PTFE Lens Antenna + SS Conn.                            |
| Cable Entry                             | M20 / 1/2" NPT (OPTIONAL)                | M20 / 1/2" NPT (OPTIONAL)                           | M20 / 1/2" NPT (OPTIONAL)                               | M20 / 1/2" NPT (OPTIONAL)                               |
| Response Time                           | Less than 1 Sec                          | Less than 1 Sec                                     | Less than 1 Sec                                         | Less than 1 Sec                                         |
| Load Impedance                          | 700 $\Omega$                             | 700 $\Omega$                                        | 700 $\Omega$                                            | 700 $\Omega$                                            |
| Protection                              | Ip67 / 68 Ex db IIC T6 Gb Ex ia IICT6 Ga | Ip67 / 68 Ex db IIC T6 Gb Ex ia IICT6 Ga            | Ip67 / 68 Ex db IIC T6 Gb Ex ia IICT6 Ga                | Ip67 / 68 Ex db IIC T6 Gb Ex ia IICT6 Ga                |
| Failure Output                          | 3.9mA/Hold/22mA                          | 3.9mA/Hold/22mA                                     | 3.9mA/Hold/22mA                                         | 3.9mA/Hold/22mA                                         |

# 80GHz RADAR LEVEL TRANSMITTER WITH BLUETOOTH

MODEL : SC / L-1501

Compact 80GHz Radar



## MODEL CODING : SC / L-1501 - 1-2-3-4-5-6-7-8-XX

### 1. Approvals

|   |          |
|---|----------|
| P | Standard |
|---|----------|

### 2. Temperature

|   |              |
|---|--------------|
| A | -40° to 80°C |
|---|--------------|

### 3. Antenna Material

|   |    |
|---|----|
| C | PP |
|---|----|

### 4. Thread / Flang

|    |              |
|----|--------------|
| GC | Thread G 1½A |
| GD | Thread G 2A  |
| GE | Thread G 2½A |

### 5. Output

|   |                            |
|---|----------------------------|
| A | 4-20mA (2wire, 24VDC)      |
| B | 4-20mA HART (2wire, 24VDC) |

### 6. Housing

|   |                 |
|---|-----------------|
| D | Aluminum - IP68 |
| H | PP - IP68       |

### 7. Display / Programming

|   |                                |
|---|--------------------------------|
| A | With Loop Powered Indicator    |
| B | Without Loop Powered Indicator |

### 8. Range

|   |                                          |
|---|------------------------------------------|
| X | Mention Maximum Range in marters (10/30) |
|---|------------------------------------------|

# 80GHz RADAR LEVEL TRANSMITTER WITH HART

MODEL : SC / L-1502

Compact 80GHz Radar



**MODEL CODING : SC / L-1502 - 1-2-3-4-5-6-7-8-XX**

## 1. Approvals

|   |                                                                     |
|---|---------------------------------------------------------------------|
| P | Standard                                                            |
| F | Explosion Proof (Ex db IIC T6 Gb)                                   |
| I | Intrinsic Safe (Ex ia IICT6Ga)                                      |
| G | Explosion Proof (Ex db IIC T6 Gb) + Intrinsic Safe (Ex ia IICT6 Ga) |

## 2. Temperature

|   |               |
|---|---------------|
| A | -40° to 100°C |
|---|---------------|

## 3. Antenna / Sensor

|   |                                        |
|---|----------------------------------------|
| D | PTFE Lens Antenna with PVDF Connection |
|---|----------------------------------------|

## 4. Process Connection Size

|    |                                      |
|----|--------------------------------------|
| GC | Thread 1½A (for Liquid Applications) |
| GD | Thread G 3A (for Solid Application)  |

## 5. Output

|   |                              |
|---|------------------------------|
| B | 4-20MA HART (2 Wire, 24 VDC) |
| R | RS485 Modbus                 |

## 6. Housing / Enclosure

|   |                      |
|---|----------------------|
| D | Aluminum (2 Chamber) |
| G | SS316                |

## 7. Cable Entry

|   |        |
|---|--------|
| M | M20    |
| N | ¼" NPT |

## 8. Display

|   |                                                                  |
|---|------------------------------------------------------------------|
| A | Integral LCD Display with Keypad                                 |
| B | Integral LCD Display with Keypad + Remote Loop Powered Indicator |

## 9. Range

|    |                                       |
|----|---------------------------------------|
| XX | Maximum Range in meters (10/15/30/40) |
|----|---------------------------------------|

Flange As Per Customer Requirement

# 80GHZ HIGH FREQUENCY RADAR LEVEL TRANSMITTER

MODEL : SC / L – 1503L (Liquid, Slurries)

MODEL : SC / L – 1503S (Solid)



## MODEL CODING : SC / L-1503 - 1-2-3-4-5-6-7-8-XX

### 1. Approvals

|   |                                                                     |
|---|---------------------------------------------------------------------|
| P | Standard                                                            |
| F | Explosion Proof (Ex db IIC T6 Gb )                                  |
| I | Intrinsic Safe (Ex ia IICT6Ga)                                      |
| G | Explosion Proof (Ex db IIC T6 Gb) + Intrinsic Safe (Ex ia IICT6 Ga) |

### 2. Temperature

|   |                                            |
|---|--------------------------------------------|
| A | -40° to 200°C                              |
| B | -40° to 250°C                              |
| D | -40° to 400°C/-40° to 1200°C (Only with G) |

### 3. Antenna / Sensor

|   |                                                    |
|---|----------------------------------------------------|
| C | PTFE Lens Antenna with SS316L Connection PTFE Seal |
| E | SS316L Horn Antenna with PTFE Seal                 |
| G | Ceramic with Horn Antenna / or Special HT Bracket  |

### 4. Process Connection Size

|    |             |
|----|-------------|
| GC | Thread 1½A  |
| GD | Thread G 3A |

### 5. Output

|   |                                                        |
|---|--------------------------------------------------------|
| B | 4-20MA HART (2 Wire, 24 VDC)                           |
| C | 4-20MA HART (4 Wire, 24 VDC) -230/110 VAC through SMPS |
| R | RS485 Modbus                                           |

### 6. Housing / Enclosure

|   |                      |
|---|----------------------|
| D | Aluminum (2 Chamber) |
| G | SS316                |

### 7. Cable Entry

|   |        |
|---|--------|
| M | M20    |
| N | ½" NPT |

### 8. Display

|   |                                                                  |
|---|------------------------------------------------------------------|
| A | Integral LCD Display with Keypad                                 |
| B | Integral LCD Display with Keypad + Remote Loop Powered Indicator |

### 9. Range

|    |                                                  |
|----|--------------------------------------------------|
| XX | Maximum Range in meters (40) - SC/L-1503L        |
| XX | Maximum Range in meters (70/85/120) - SC/L-1503S |

Flange As Per Customer Requirement



| Head Office                                                                                                                                                                                                 | Plant                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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