



**SKE** | **SS**  
Simple. Reliable. Intelligent.



# SKR800N Radar Level Transmitter

**RS485 Communication. All-in-One Compact Housing.**

The Radar Level Transmitter is connected directly via RS485 communication interface, providing simple, reliable, cost-saving process data with remote monitoring, calibration, configuration and diagnostic capabilities. Housing in a robust IP68 proof enclosure, 1500 N tensile strength Kevlar reinforced cable, up to 10m digital data transmission, the transmitter is ideally used in water/wastewater industry.

## Advantages

- All-in-One Compact Housing, Built-in Transmitter and Sensors
- Robust IP68 Water Submersible Protection, Directly Installed in the Field, No Cabinet Required
- 80 GHz Superior Focusing Radar Beam, Beam Angle Less than 4° to Avoid Obstacles and Build up in Confined Spaces
- 120 dB Wide Dynamic Range to Accurately and Reliably Measure Poorly Reflective Liquides, Liquid down to Bottom level, Even with Surface Foam, Extremely Turbulent Flow, and Condensation on Antenna
- High Resistant PVDF Antenna for Long Service Life in Harsh Environment such us Sewers, Wastewater Treatment Plant, Corrosive Chemical & Solvent Tanks
- Advanced Intelligent Algorithm and Signal Processing Technology to Eliminate Echo Noise
- Surcharge Hydrostatic Level Sensor, Continue to Provide Uninterrupted Level Measurement
- Plug & Play, On-line Realtime Measurement
- Ultra Low Power Consumption, Ideal for Outdoor Applications
- 1500 N Tensile Strength Kevlar Reinforced Cable
- Surge Protection for Power and RS485 Communication
- RS485 Digital Communication, Minimize Cabling and Engineering Cost
- Standard Modbus RTU Protocol, Direct Connected with PLC, HMI
- Onboard Memory Allowing Users Easily Calibrate and Configure Sensor at Lab and Distribute to Various Fields Sites
- SRK software Tool for Data Monitoring, Calibration, Configuration and Diagnosis

## Applications

Corrosive liquids, surface water, wastewater with foam and particles etc.

## Measurement Method

The sensor combines proven radar measurement technology with state-of-the-art spectral signal processing technology to provide a reliable and accurate way to measure level.

## Installation

Submersible, flow through, pipe insertion

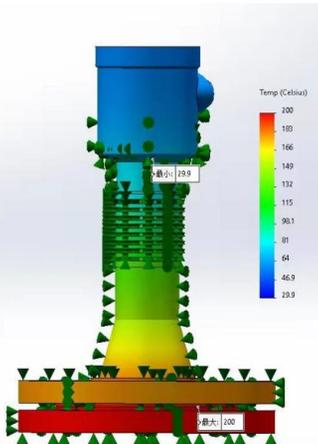


## 2-wire 80GHz FMCW Radar

Frequency 26GHz Radar Level



Thermal image



Frequency 80GHz Flanged Radar Level



Frequency 80GHz Radar Level  
3° Beam Angle



## Specifications

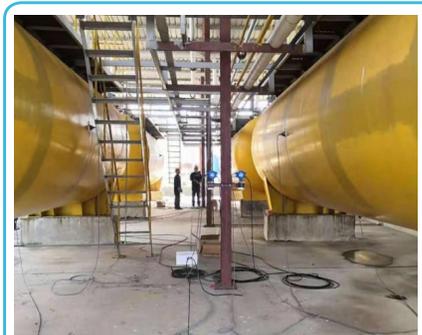
|                          |  |
|--------------------------|--|
| <b>General</b>           |  |
| Output Signal            | RS485 (Modbus RTU protocol), 19,200 bps, 8 data bits, no parity, 1 stop bit; 4~20 mA                                 |
| Data Resolution          | 16 bits (0.001% FS)  |
| Surge Protection         | 24 VDC   |
| Power                    | 0~24VDC, 0.5 A   |
| Protection               | Polarity, Overload, Short circuit  |
| Safety                   | CE, FCC  |
| <b>Radar Level</b>       |  |
| Frequency                | 80 GHz   |
| Angle                    | 3°   |
| Measurement Range        | SKR-800N Range: 0 ~ 10m, Level adjustable  |
| Accuracy                 | ±2 mm  |
| Resolution               | 0.1 mm   |
| Operating Pressure       | -1 ~4 Kgf/cm <sup>2</sup>  |
| Operating Temperature    | -40~+120 °C (optional) -40 ~ +150°C  |
| Response Time            | 1 sec  |
| Protection               | IP68   |
| Connection               | 1"-11 PT; M16 plug fixed cable ; M12 connector, 5-pin  |
| Housing Material         | POM (housing) ; PVDF (antenna)   |
| Cable                    | Kevlar reinforced PUR cable, 1500N tensile strength  |
| Dimensions               | ø 90 X 204.8(H) mm (no hydrostatic level sensor) ; ø 90 X 243(H) mm (includes hydrostatic level sensor)              |
| Weight                   | transmitter: approx. 1.2 Kg (no hydrostatic level sensor), 1.5 Kg (includes hydrostatic level sensor); cable: 80 g/m |
| <b>Hydrostatic Level</b> |  |
| Measurement Range        | 0~5 m ; 0~10 m (optional)  |
| Accuracy                 | ±0.1% FS (SS316L); ±0.25% FS (Titanium)  |
| Resolution               | 0.01% FS   |
| Repeatability            | ±0.025% FS   |
| Stability (annual)       | ±0.1% FS   |
| Safety Load              | 3 X measurement range  |
| Rupture                  | >4 X measurement range   |
| <b>Temperature</b>       |  |
| Sensor                   | Pt1000   |
| Measurement Range        | -30~75 °C  |
| Accuracy                 | ± 0.1 °C   |
| Resolution               | 0.01 °C  |
| Repeatability            | 0.1 °C   |

### Ordering Codes

### Dimensions



**LPG Case**  
LPG Spherical Tank, Height: 15m



**Liquid Ammonia Case**  
Ammonia Horizontal Tank, Height: 3m



**Fuel Tank Case**  
Fuel Horizontal Tank, Height: 4m

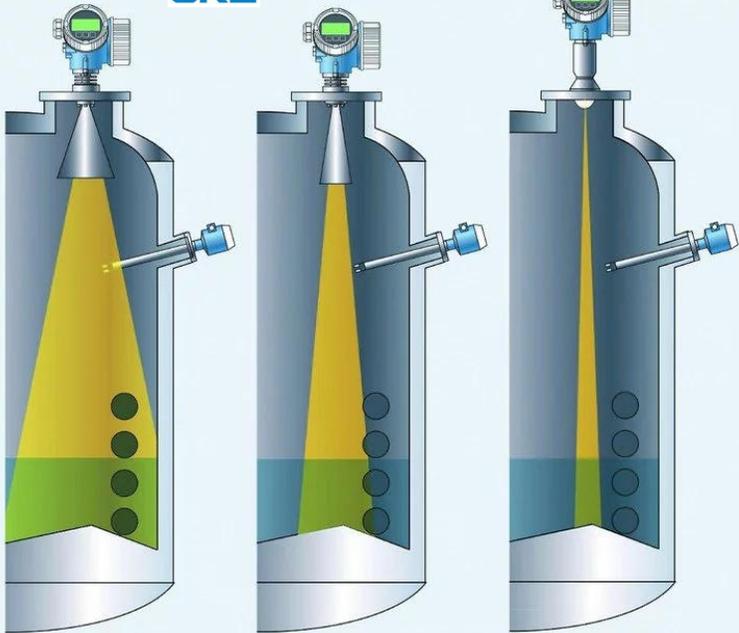


**Liquid Chlorine Case**  
LPG Horizontal Tank, Height: 3m



**Trichloropropane (C3H5Cl3) Case**  
Trichloropropane (C3H5Cl3) Vertical Tank, Height: 5m

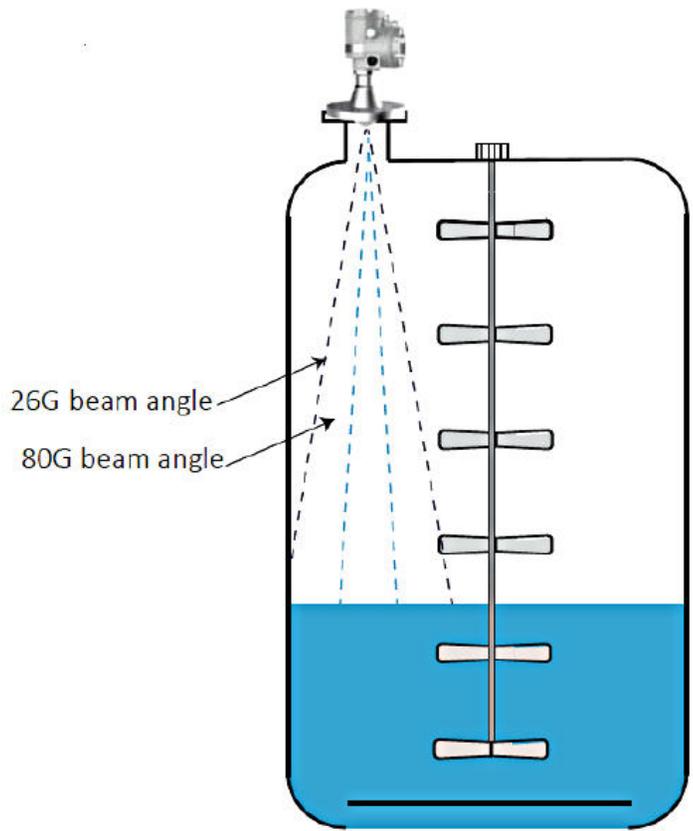
**SKE**



6 GHz  
6" Antenne  
Abstrahlwinkel 23°

26 GHz  
3" Antenne  
Abstrahlwinkel 10°

80 GHz  
3" Antenne  
Abstrahlwinkel 3°



26G beam angle  
80G beam angle

### Specification parameters

|                            |  |
|----------------------------|--|
| Application                | Liquid, corrosive liquid, low dielectric constant or surface fluctuation liquid, Solid powder, soolid particles, strong dust prone to crystallization, slurry; Process container, exposure situation, sanitary liquid storage container, crude oil storage tank, light oil storage tank, volatile liquid storage tank, high material level and so on |
| Measuring range            | 8m, 0~15m, 30m, 70m  |
| Process connection         | Thread, Flange, Universal type flange  |
| Process temperature        | -40~120°C, -40~150°C, -40~250°C, -40~400°C,  |
| Process pressure           | -0.1~0.3MPa, -0.1~1.6MPa, -0.1~2.0MPa, -0.1~4.0MPa, -0.1~40MPa   |
| Accuracy                   | ±2mm, ±5mm, ±8mm, ±15mm  |
| Frequency range            | 120GHz, 26GHz, 6.8GHz, 100Mhz~1.8GHz   |
| Explosion protection grade | Exia IIC T6/IP68   |
| Signal output              | 4~20mA/HART ( two wire / four wire )/RS485/Modbus  |

No matter it is 4~20mA/HART signal output or Profibus Pa signal output, Radar sensor can be adjusted through software. Adopting RRFPF software to adjust, RRF requires an instrument of CONNECTCAT driver. The software and CONNECTCAT driver can be ordered as accessories. When using software to make adjustment, 24VDC voltage should be given to radar instrument. At the same time, a 250Ω resistor should be added to the front end of HART adaptor. If the voltage supply instrument is integrated HART resistor(internal resistance 250Ω), there is no need to add an extra external resistor. At this time, HART adaptor can be connected with 4-20mA in parallel.

CMRI certified Ex-proof enclosure for Hazardous Area Zone-1 & Zone-2 for panle mounted Indicators

