

# FieldKey NHU200 Wireless adapter

## Making wireless networks easy



### Wireless upgrade adapter

- Add WirelessHART capability to an installed HART Instrument
- 2.4 GHz operating frequency (ISM Band)

### Range

- Up to 200 m (656 ft) Outside
- Up to 50 m (164 ft) Inside

### Loop powered

- Does not require battery power
- Automatically adapts to available power

### Robust design

- Fixed antenna with rotating housing
- Potted electronics

### Small size to assist with installation

- Body 47 x 47 mm (1.85 x 1.85 in.)
- M20 and ½ in. NPT fitting

### Built to survive

- IP 67 and NEMA 4X environmental protection

### WirelessHART standard

- Reliable and simple wireless mesh network
- Adapts to nearby wireless networks (co-existence)
- Data encryption and authentication
- Channel hopping

### Certification

- IP 67
- HART 7
- 802.15.4 radio

### Applications

- Condition monitoring (ABB Asset Vision)
- Read all Process values from installed HART instruments
- Network repeater (extender)

# FieldKey NHU200 Wireless adapter

## Adapter mounting

The adapter can be mounted on the field instrument via a spare cable gland entry or via a T-Piece if no spare gland is available. It would also be possible to connect the adapter at another convenient point in the 4 to 20 mA loop, for example at a junction box.

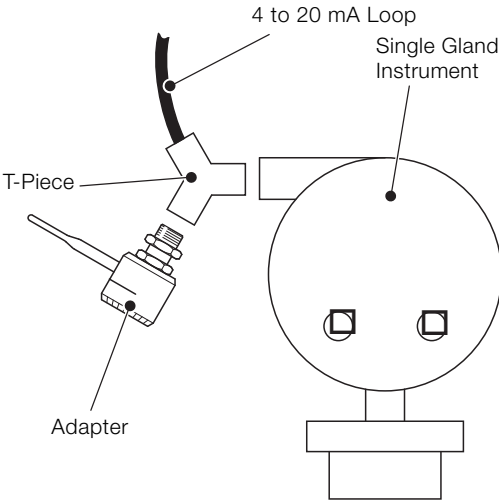


Fig. 1: Single gland instrument

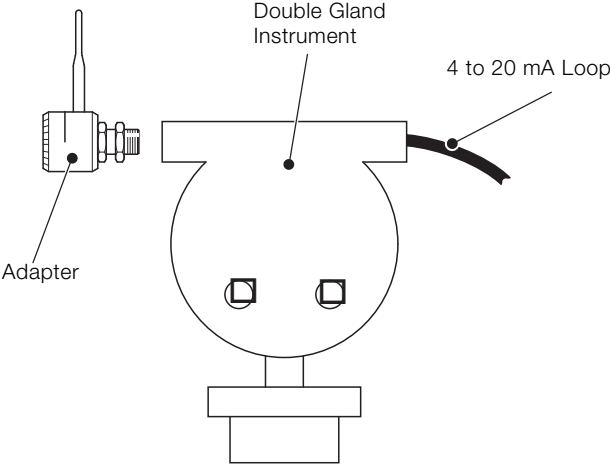


Fig. 2: Via a spare gland on an instrument

## Antenna

Omnidirectional antenna with vertical polarization.

### Antenna positioning

The antenna is positioned by rotating the adaptor housing until the antenna is in the best position (normally in a vertical direction). The housing can be locked by adjusting the Rotation locking nut.

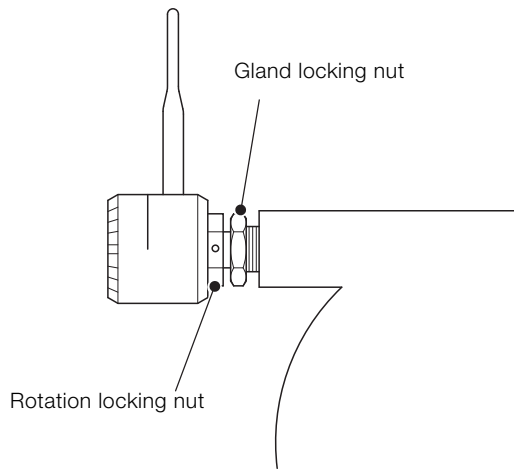


Fig. 3: Antenna positioning

## Electrical connections

The FieldKey wireless adapter uses energy harvesting where power is taken from the 4 to 20 mA instrument loop, as a result there is no battery to install or maintain. The adapter is wired in series with the instrument loop as shown in this diagram. It may take up to 3 minutes for the adapter to store sufficient energy for it to be ready for commissioning (set Network Identity and Join Key).

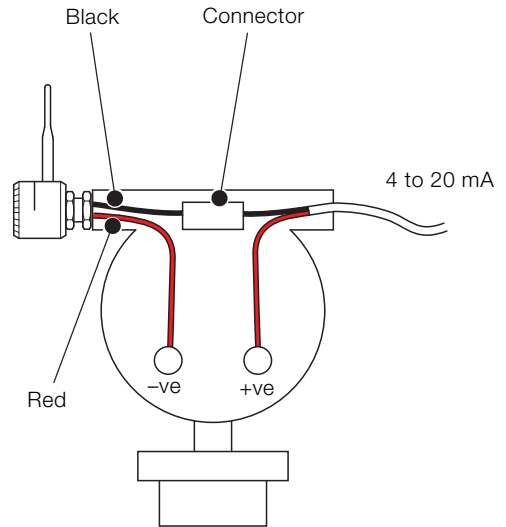


Fig. 4: Electrical connections

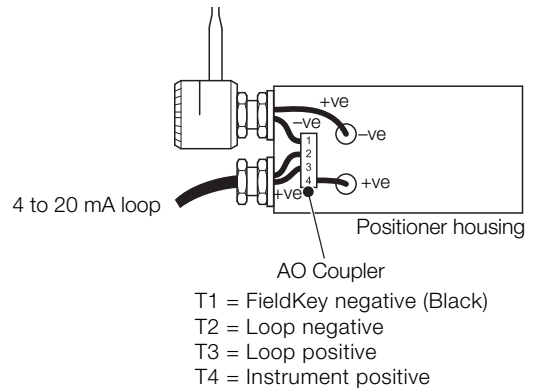


Fig. 5: Electrical connections AO coupler

# FieldKey NHU200

## Wireless adapter

### Technical specification

#### Electrical specifications

Communication type

- HART

Protocol version

- HART Version 7.0 wired and wireless
- HART Version 5.9 wired

Transmission range

- up to 200 m outside

Device loop power

- Power consumption 9 ... 51 mW  
(@ 3.6 ... 22 mA)
- Loop voltage drop max 2.3 V  
(no external 250  $\Omega$  resistor required)

Diagnosis

- Device status NE 107
- Wired communication quality and statistics
- Wireless communication quality and statistics
- Join status
- Subdevice status
- Subdevice information

#### Ambient specifications

Ambient temperature

- -40 ... 85 °C (-40 ... 185 °F)

Transport/Storage temperature

- -40 ... 85 °C (-40 ... 185 °F)

Climate class

- CX, -40 ... 85 °C (-40 ... 185 °F)
- 5 ... 95 % relative humidity (acc. with DIN EN 60654)

Relative humidity

- max. 100 %, condensation permitted  
(acc. with EC 68000-2-30)

Vibration resistance

- 10 ... 2000 Hz at 5 g in acc. with IEC 60068-2-6  
during operation and transport

Shock resistance

- gn = 30 in acc. with IEC 60068-2-27  
during operation and transport

Type of protection

- IP 67 / NEMA 4X

#### Mechanical specifications

Weight

- 220 g (0.48 lb)

Housing material

- Polycarbonate

Color

- Grey RAL9002

Gland connection size

- Gland connection size M20 x 1.5 (AISI 316 SST) or  
1/2 in. NPT (AISI 316 SST)

Type of connection cable

- 0.75 mm<sup>2</sup> / AWG 20
- 0.3 m

#### Antenna

Type

- Omnidirectional antenna with vertical polarization, IP 67

#### T-Piece

Material

- Stainless steel AISI 316 SST

Connections

- M20 x 1.5 or 1/2 in. NPT

## Overall dimensions

Dimensions in mm (in.)

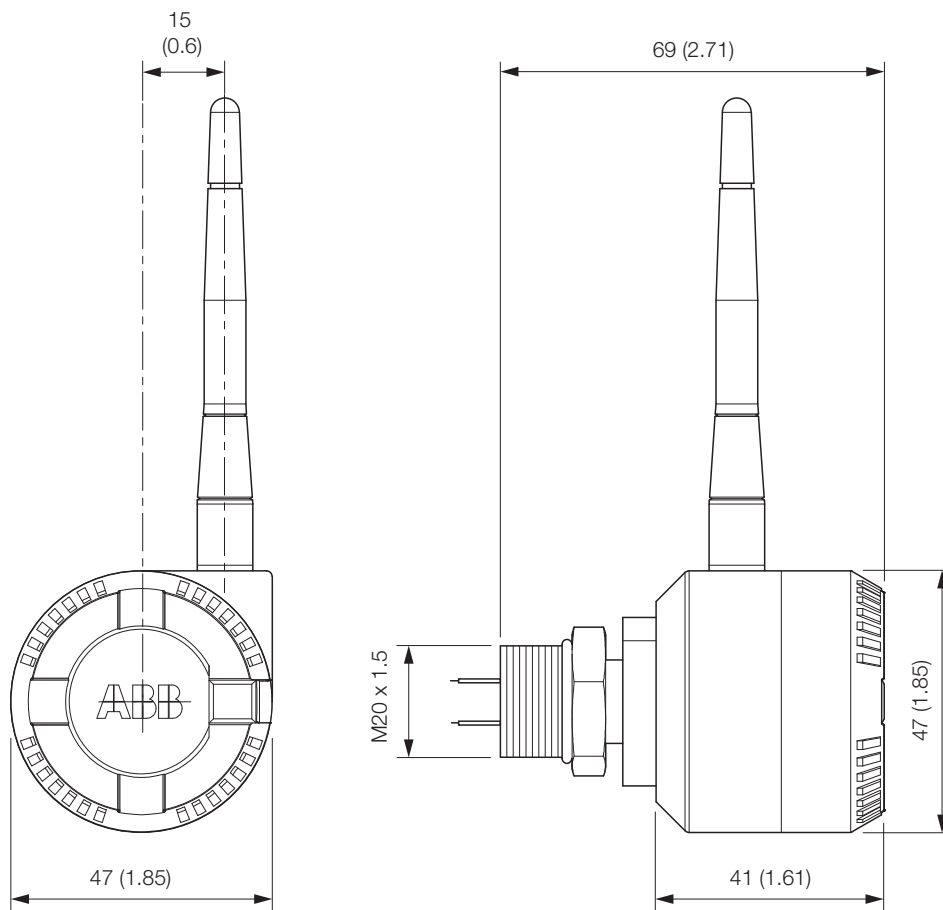


Fig. 6: Overall dimensions

# FieldKey NHU200 Wireless adapter

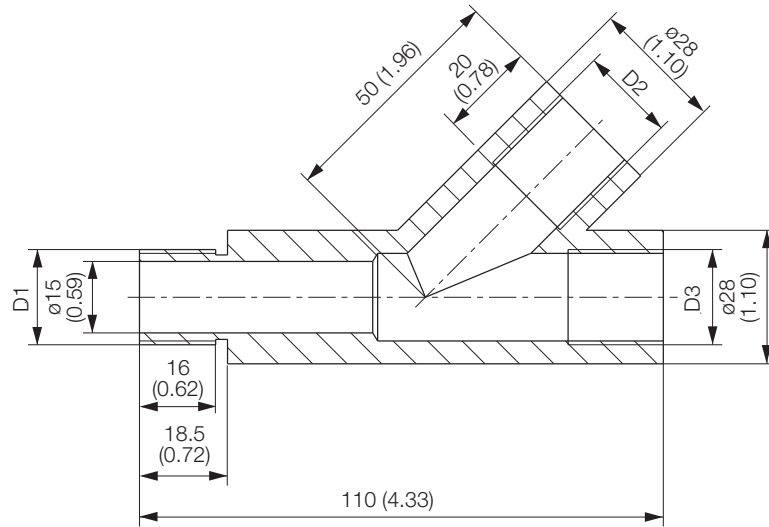


Fig. 7: Overall dimensions wireless T-piece

Index	Part No.	D1	D2	D3
1	CNW IP0010	M20 x 1.5-6g	M20 x 1.5-6H	M20 x 1.5-6H
2	CNW IP0011	1/2 " NPT	1/2 " NPT	1/2 " NPT

## Ordering information

FieldKey NHU200 wireless adapter	NHU200	XX	X	X	X	XX	XX
<b>Adapter HART FSK to Wireless Network</b>							
Loop powered - fixed antenna	WL						
Includes DD and DTM for host integration							
Includes CE Mark							
<b>Wireless Protocol</b>							
Wireless HART			1				
Others			9				
<b>Design</b>							
Wireless Adapter using a spare instrument gland for connection				A			
Wireless Adapter for use where the instrument has no spare gland for connection includes T-piece pipe mount				B			
<b>Gland Connection Size / Material</b>							
M20 x 1.5 / AISI 316 SST					5		
1/2 in. NPT / AISI 316 SST					6		
<b>Explosion Protection Certification</b>							
General purpose non-hazardous area						Y0	
<b>Documentation Language</b>							
English							M5

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