APPLICATION NOTE

WIRELESS CONNECTION

Revision Record:

Date	Description	Written by	Rev.
1/1/2006	1st release	Zohar Petel	1.00
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1. SCOPE

This document provides an introduction to the wireless connection solutions for Solid AT products 4-20mA.

2. OBJECTIVES

- Familiarize the user with Solid AT's wireless connection solutions.
- Familiarize the user with wireless RF solutions for 4-20mA connections.

3. WIRELESS CONNECTION

The advantages of a radio link quickly become apparent from process engineering: spread over a large site, levels and control commands are to be measured and transmitted to a control system on the other side of the street. Digging trenches, laying cable routes and installing the cables involves high costs. The costs of development and inspection and the time and costs involved in obtaining permits before the start of the project further increase expenditure.

With a wireless connection, analog sensor signals can be received and transmitted safely via radio link. Planners and users therefore have access to a very simple transition path for industrial fields of applications. Signals that would previously be very hard or impossible to acquire can now be acquired fast and without complications.

The user has continuous access to a radio link – it can be a unidirectional or a bi-directional system.

In order to use Solid AT's products with wireless connection capabilities you should use 4-20mA wireless connection.

Solid AT's SmartScan and MonoScan products support wireless 4-20mA product connections.

Solid AT has tested a wireless 4-20mA solution of Phoenix contact and recommends the Phoenix wireless unidirectional system product. Phoenix worldwide contacts can be found via the following link: http://www.phoenixcontact.com/com/index_1024.htm

4. WIRELESS CONNECTION SOLUTIONS

4.1 POINT TO POINT

In a Point to Point system the signals are connected directly and the radio connection is established automatically.

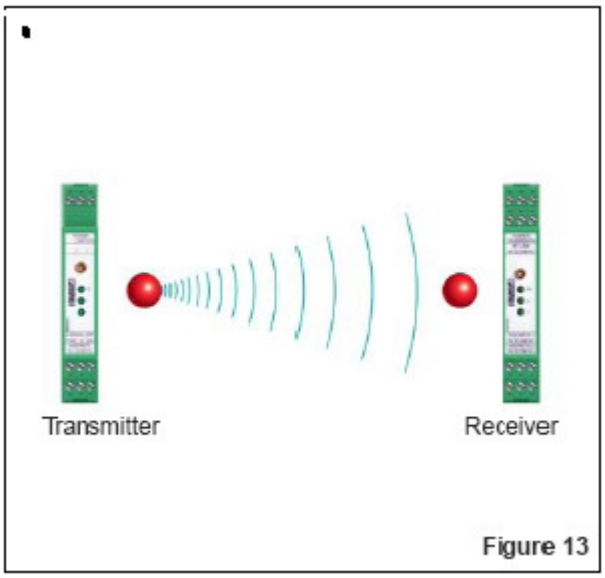


Figure 13

4.2 POINT TO MULTI -POINT

In a Point-to-Multi-Point system, the bidirectional system becomes a unidirectional system with one transmitter and any number of receivers.

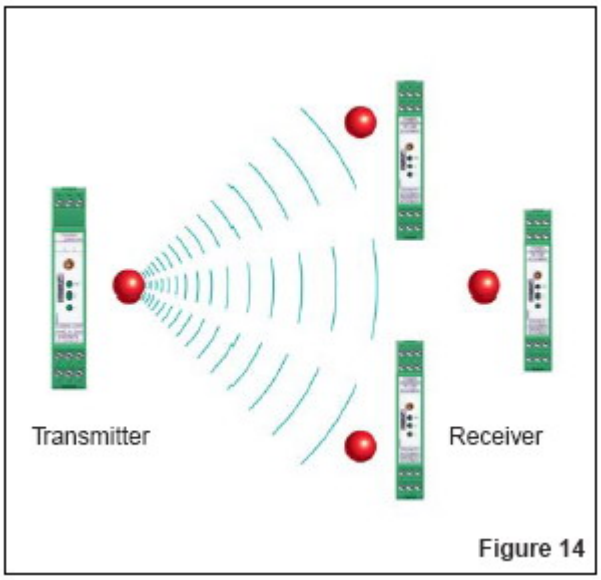
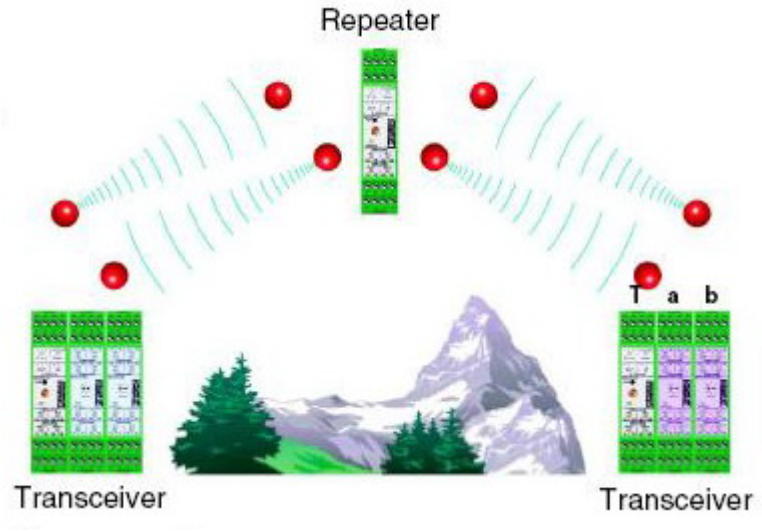


Figure 14

4.3 REPEATER SOLUTION

Repeaters can be used to overcome large obstacles (e.g. mountain tops) or to increase range.

To extend an existing point-to-point system with a repeater, additional transceivers with repeater configurations are required for the existing set.



5. WIRELESS INTERFACE – CONNECTION

The terminal station (Transmitter) of the wireless interface unit is connected to an external power supply 10-30VDC.

The MonoScan is connected only to the transmitter & gets the supply voltage of 12-30V DC.

The transmitter picks up the analog signal (4-20mA) and transmits it via an appropriate directional or round antenna.

The receiver is connected to the PLC, scada or to the current meter for monitoring or process and also to an appropriate power supply of 10-30VDC or AC (with adaptor).