

PROFIBUS



Overview of Profibus

Profibus is a broadcast bus protocol that operates as a multimaster/slave system.

There are three distinct versions of Profibus which have been tailored for different applications. All three version share a common underlying bus access protocol.

The three version of Profibus are:

Profibus-DP

Profibus DP is optimised for speed and low cost. The DP version of Profibus is for communication between automation, control systems and distributed I/O at the device level. RS-485 or fiber optic.
Compatible with SATELLINE radio modems (RS-485).

Profibus-PA

Profibus PA is designed for process automation. PA can be easily used in intrinsically safe areas because both communication and power is supplied over the same two wires. (IEC 1158-2)

Not compatible with SATELLINE radio modems.

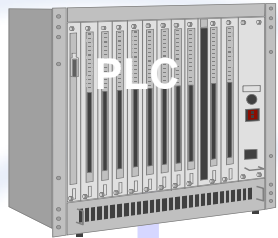
Profibus-FMS

General purpose for all levels. Provides powerful (complex) services for applications. It also provides great flexibility. RS-485 or fiber optic physical layer. Allows multi-master communications.

Not compatible with SATELLINE radio modems.

Typical PROFIBUS-DP System

Master

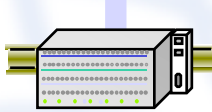


A typical PROFIBUS-DP System consists of:

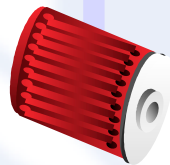
- One PLC/PC as central controller
- Various peripheral devices such as:
 - Digital or analog I/O
 - AC or DC drives
 - Magnetic or pneumatic valves
 - Human machine interface (HMI)

RS 485 up to 12 Mbps, with 3AS up to 19.2 kbps

PROFIBUS-DP



Slave



Slave

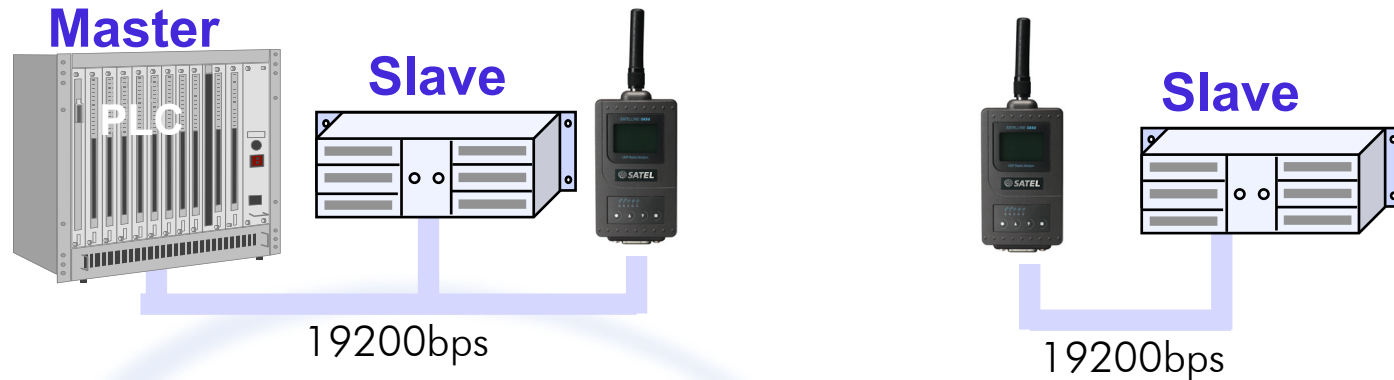


Slave



Slave

PROFIBUS-DP System with 3AS



System with one bus segment (max. 124 slaves)



System with two bus segments

Profibus bus parameters

PROFIBUS is based on a continuous polling from the master(s) to the slave(s).

The bus parameters control the delay between the polls. They are the same for every station in the segment.

The default parameters are too fast for 3AS. Changing the parameters suitable for 3AS also increases overall system polling time.

BUS PARAMETERS (COM PROFIBUS)

SETTINGS:

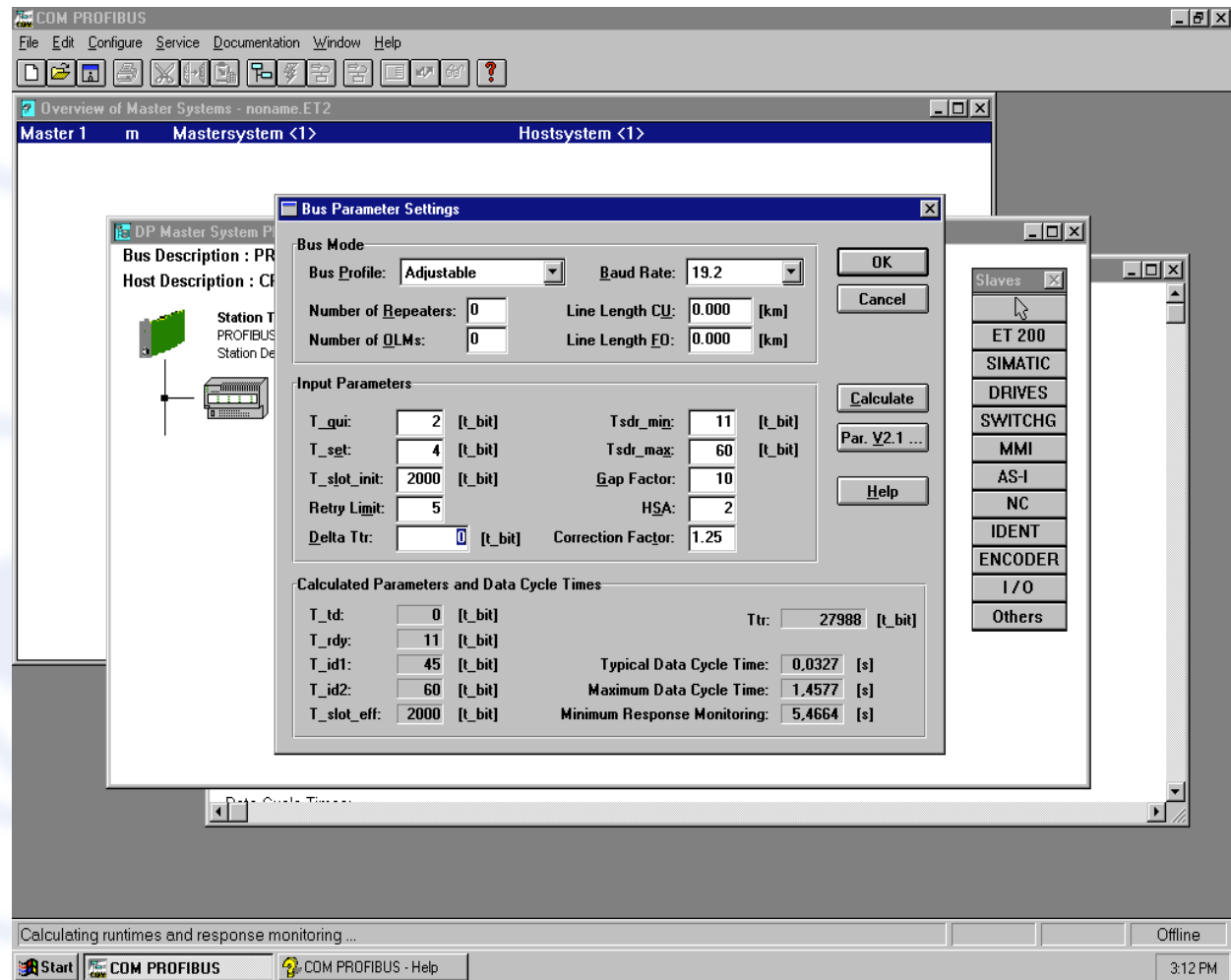
HSA=equal to the real highest station address in the system

NOTE! Use right value eq. number of slaves 2, value should be 2 not 126 what is the default.

Data speed= 9600 / 19200 bps

Min Tsd < Max Tsd < T_slot

T_slot_init	1000
Max Tsd	980
Min Tsd	36
Tset	1
Tqui	0
GapFactor	50
Retry limit	5

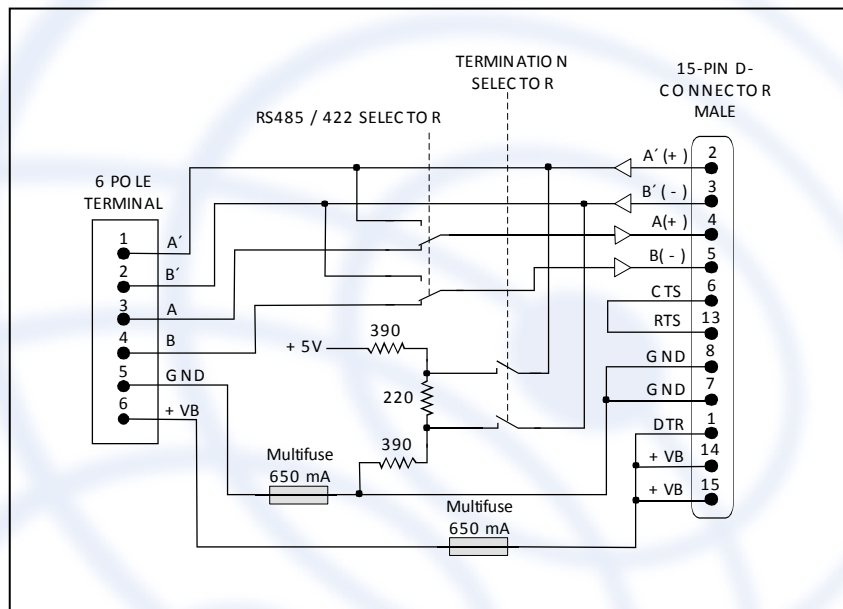


Wireless Profibus Bus Parameters and Wiring

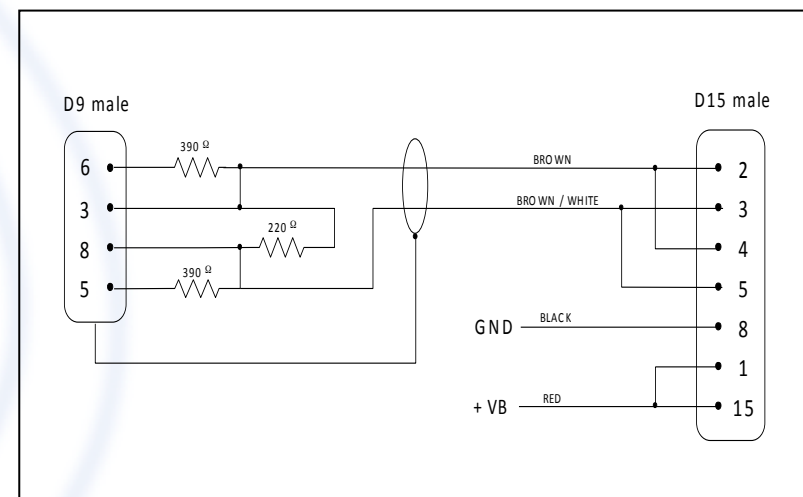
Profibus is using RS-485 as an electrical standard for serial ports. RS-485 is a differential two-wire interface supporting half-duplex operation.

The SATELLINE-3AS radio modem can be connected to Profibus cable by using NARS-2 interface adapter or to Profibus device with a CRS-PB interface cable.

The SATELLINE 3AS port settings are ; **Port-2 ON**, 9600 or 19200 bit/s, **8** , **E** , **1**



Schematic diagram of NARS-2 interface adapter



Schematic diagram of CRS-PB interface cable

Three Easy Steps to Install 3AS to a PROFIBUS-DP System

1. Set the bus parameters.
2. Install the 3AS to the bus with CRS-PB cable.
3. Power up the system