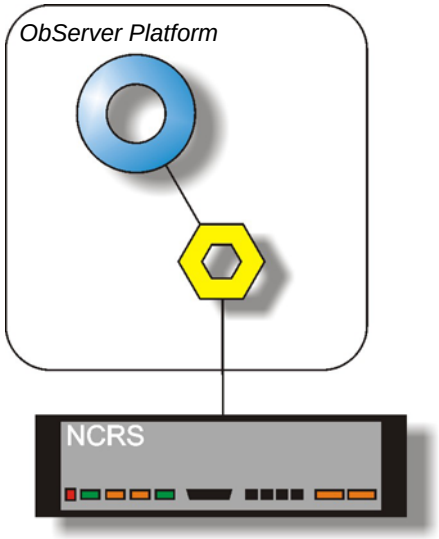
Product Engineering Guide

OSM v20 StaefaNCRS v10

Introduction

The StfaNCRS OSM links a network of Staefa MS2000 NCRS/NCRE system controllers to ObServer. Each controller stores values within a database. Protocol versions 2.0 and 3.0 are supported. Refer to the supported range below, for the current listing of available Block Types.



Supported Range

- Staefa MS2000 NCRS/NCRE system - Block Types available:
  - NCRS Time and Date Based Blocks
    - Time Clock (Clk 2)
    - Optimal Start/Stop (Oss 3)
    - Duty Cycle (Dcy 4)
    - Delay (Dly 5)
    - Date (Dat 6)
    - Day of Week (Dow 7)
    - Time Schedule (Sched 141)
  - NCRS Calculator Blocks
    - Threshold (Thr 8)
    - Analog Selector (Sel 9)
    - Converter (Cnv 10)
    - PID Controller (Pid 11)
    - Math Single Input (Mt1 13)
    - Math Dual Input (Mt2 14)
    - Math Quad Input (Mt4 15)
    - Enthalpy (Ent 16)
    - Relative Humidity (Rh 55)
    - Dew Point (Dewpt 56)
    - Wet Bulb (Wetbt 57)
    - Logic Single Input (Lg1 18)
    - Logic Dual Input (Lg2 19)
    - Logic Quad Input (Lg4 20)
    - Sequence (Seq 21)
    - Multiple OP Truth Table (Mtt 22)
    - Single OP Truth Table (Stt 23)
  - NCRS Alarm Blocks
    - Analog Alarm (Ala 24)
    - Feedback Alarm (Fbk 25)
    - Change of State Alarm (Cos 26)
    - Trunk Configuration (Trunk 140)
    - Modem Dial (Modem 28)
    - Alarm Device (Aldev 29)

- Report Device (Rpdev 137)
- Send Message (Snmsg 138)

- NCRS Network Blocks
  - Virtual Analog Input (Vai 34)
  - Virtual Digital Input (Vdi 35)
  - Virtual Analog Output (Vao 36)
  - Virtual Digital Output (Vdo 37)
  - Node Status Information (Node 38)
  - Local Area Network (Lan 39)
- NCRS Storage Blocks
  - Historical Accumulator (His 40)
  - Digital Totalizer (Dgt 41)
  - Analog Totalizer (Ant 42)
  - Digital Value (Dig 43)
  - Analog Value (Ana 44)
- Pronto Blocks
  - Pronto Set Up (Psup 45)
  - Pronto Trunk (Ptrk 46)
  - Pronto Initialization (Pinit 47)
  - Pronto Input/Output (Pio 48)
  - Pronto Read (Pread 49)
  - Pronto Write (Pwr 50)
  - Pronto Read Group (Prgrp 51)
  - Pronto Write Group (Pwgrp 52)
- NCRS Totalizer Blocks
  - Alarm Totalizer (Altot 54)
- AS1000 Blocks
  - RS Single Op Mode Status (Rspgd 58)
  - RS Op Mode Register (Rsdw 59)
  - RS Digital Input Value (Rsdi 60)
  - RS Digital Output Value (Rsdo 61)
  - RS Digital Clock Channel (Rsdu 62)
  - RS Change of State (Rscos 63)
  - RS Current Operating Mode (Rspga 64)
  - RS Digital Setpoint Value (Rsds 65)
  - RS Digital Parameter Value (Rsdp 66)
  - RS Calculated Digital Value (Rsdz 67)
  - InterRS Digital Input Value (Rsde 68)
  - InterRS Digital Output Value (Rsda 69)
  - RS Status (Rss 70)
  - RS Universal Digital Input Value (Rsudi 71)
  - RS Analog Input Value (Rsuai 72)
  - RS Universal Digital Output Value (Rsudo 73)
  - RS Analog Output Value (Rsuao 74)
  - RS Analog Setpoint Value (Rsus 75)
  - RS Analog Parameter Value (Rsup 76)
  - RS Calculated Analog Value (Rsuz 77)
  - InterRS Analog Input Value (Rsue 78)
  - InterRS Analog Output Value (Rsua 79)
  - RS Run Time Totalizer (Rsrtt 80)
  - Nico Status (Nis 81)
  - Nico InterRS Digital Output Value (Nida 83)
  - Nico InterRS Analog Output Value (Niua 84)
- Smart II Blocks
  - Smart II Fan Coil (Fc0 86)
  - Smart II Heat Pump (Hp0 87)
  - Smart II Direct Dig Ctrl (Ddc 88)
  - Smart II Mux (Mux 89)
  - Smart II Digital Input (Di2 90)
  - Smart II Digital Output (Do2 91)
  - Smart II Analog Input (Ai2 92)
  - Smart II Analog Output (Ao2 93)
  - Smart II Pulse Accumulator (Pa2 94)
  - Smart II VAV Generic (Va0 97)
  - Smart II VAV Cooling Only (Va1 98)
  - Smart II VAV With Reheat (Va2 99)
  - Smart II VAV Fan Powered (Va3 100)
  - Smart II VAV Dual Duct (Va4 101)
  - Read/Write Smart II Database (Ws2 102)
  - Smart II Fast Scan (Si2 103)

- Smart I Blocks
  - Smart I Klimo Interface (Ski 110)
  - Smart I VAV Press Independent 000 (Sv0 111)
  - Smart I VAV Press Independent 001 (Sv1 112)
  - Smart I VAV Press Independent 002 (Sv2 113)
  - Smart I VAV Press Independent 003 (Sv3 114)
  - Smart I VAV Press Independent 004 (Sv4 115)
  - Smart I VAV Press Independent 005 (Sv5 116)
  - Smart I VAV Press Dependent 100 (St0 117)
  - Smart I VAV Press Dependent 101 (St1 118)
  - Smart I VAV Press Dependent 102 (St2 119)
  - Smart I VAV Press Dependent 103 (St3 120)
  - Smart I VAV Press Dependent 104 (St4 121)
  - Smart I VAV Press Dependent 105 (St5 122)
  - Smart I Heat Pump (Shp 123)
  - Smart I Fan Coil 000 (Sf0 124)
  - Smart I Fan Coil 001 (Sf1 125)
  - Smart I VAV Press Dependent 133 (St33 126)
  - Smart I Digital Input (Sdi 128)
  - Smart I Digital Output (Sdo 129)
- PLC Blocks
  - PLC Digital Input (Plcdi 133)
  - PLC Digital Output (Plcdo 134)
  - PLC Analog Input (Plcai 135)
  - PLC Analog Output (Plcao 136)
- NCRS Miscellaneous Function Block
  - Port Configuration (Port 139)

Notes

As each NCRS cannot be individually scanned in order to determine the blocks within, the contents must be created manually. See the notes on page 5 for more information.
The Staefa system does report alarms to ObServer.
The Staefa system does not provide logging facilities to ObServer. If logging of values is needed then a LogMax device will be required.
Drivers are also available for: Staefa Smart I (StfaSmrt); Staefa Nico (StfaNico); Staefa WSE (StfaWse); Staefa NCRE slave device (StfaPlc); and Landis & Gyr PRV2 IO system (LagPrv2).

Engineering

Step 1 – Install OSM

The StaefaNCRS OSM is installed automatically with all ObSys editions. Refer to the ‘ObSys CD sleeve’ for details on how to install ObSys.

Step 2 – Configure Staefa NCRS System

The NCRS does not have to be configured, but due to the differences between protocol versions 2 and 3, there is a Compass Driver Object, Operating Mode (OM), that needs to be set up before communications can commence.

Step 3 – Connect COM Port to Staefa NCRS System

Using cable, connect the NCRS to a COM port of the PC. Refer to the section ‘Cable’ below for details of the cable.

Step 4 – Plug in StaefaNCRS OSM to ObServer

Use object engineering software to locate the ObServer Setup object. Assign the StaefaNCRS OSM to an available channel. Refer to '*ObServer v20 Application Engineering Guide*'.

Note: After inserting the OSM, your engineering software may need to re-scan the ObServer object in order to view the OSM.

Step 5 – Configure StaefaNCRS OSM

The COM port, baudrate, device label, operating mode, alarm polling facilities, and alarm destination are configured using objects. Use object engineering software to view and modify the module objects within the OSM.

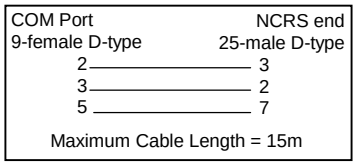
Step 6 – Access Objects within the Staefa NCRS System

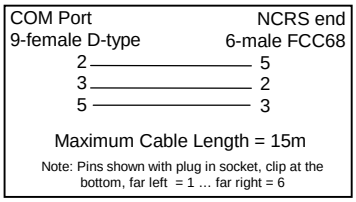
Values from the Staefa NCRS system are made available as objects from ObServer. Any object software that is connected to the ObServer can access these objects.

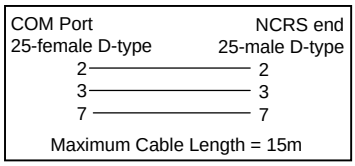
Engineering Reference

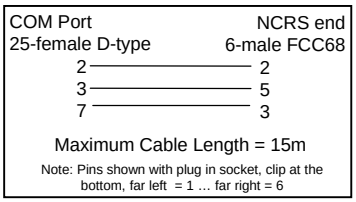
Cable Specification

The cable between COM port and 'Host A' of the Staefa NCRS is as follows:









Objects

When the OSM is loaded the following objects are created within ObServer, use object software to access these objects.

Object [1]	***Label***	***R/W***	***Type***
S*c*	StaefaNCRS System connected to channel *c*	-	*[StaefaNCRS v10* [2]
M*c*	StaefaNCRS Module connected to channel *c*	-	*[OSM v20\StaefaNCRS v10]*

Notes

[1] The ObServer channel number, *c*, is a number in the range 1…40.

[2] This object is scannable. As each NCRS may contain different datablocks, contents files must be created for each by the user.

To do so, scan in the NCRS network. This will create a folder for each NCRS found (N*y*) in the folder \\ObSys\TypeInfo\<site name>\S*x*\ where *x* is the number of the StaefaNCRS OSM and *y* is the number of the NCRS.

Within each N*y* folder copy the NCRS folder from \\ObSys\TypeInfo\StaefaNCRS v10\. For each NCRS the contents.obc file must be edited by the user to reflect the addresses of the datablocks within.