

MODULE GATEWAY COFFRET CC - LON



GB Installation and Operating instructions

Fig. 1:

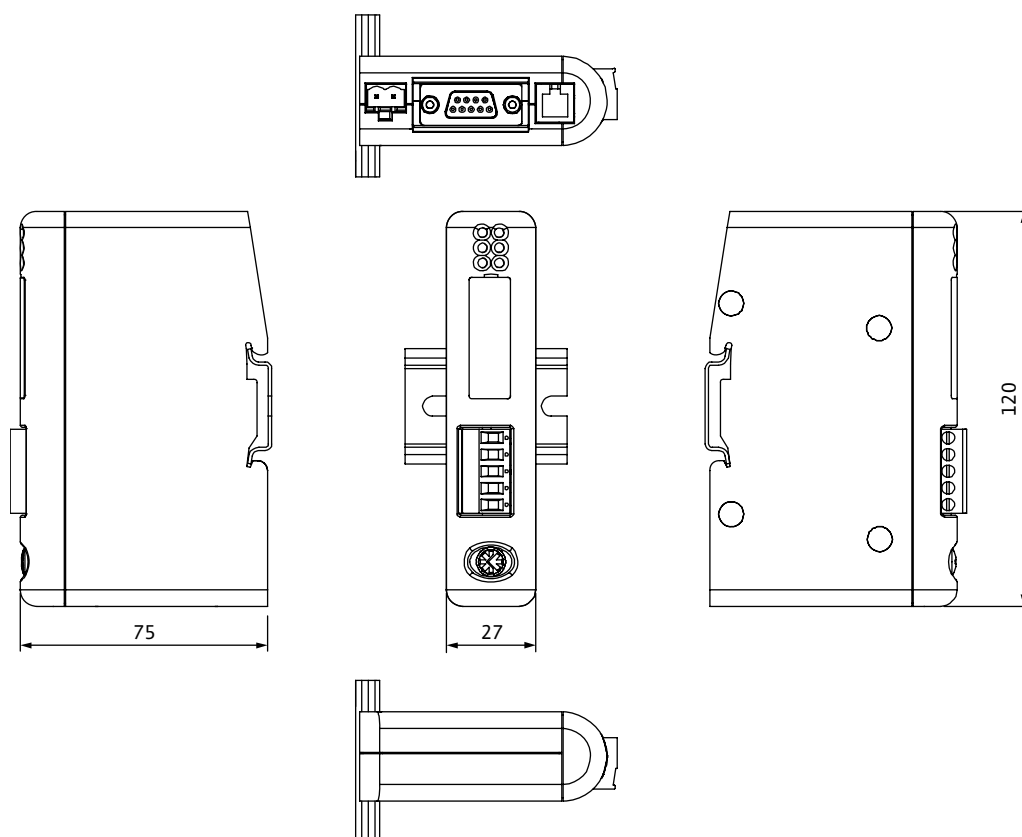
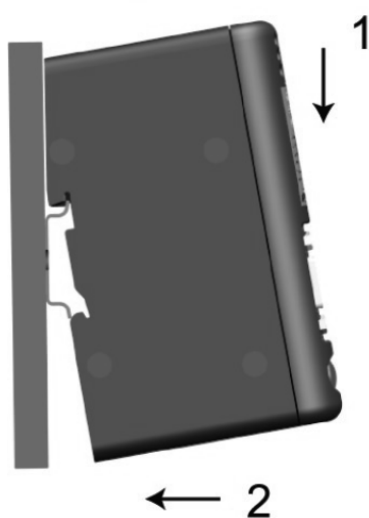


Fig 2:

A - Snap ON



B - Snap OFF

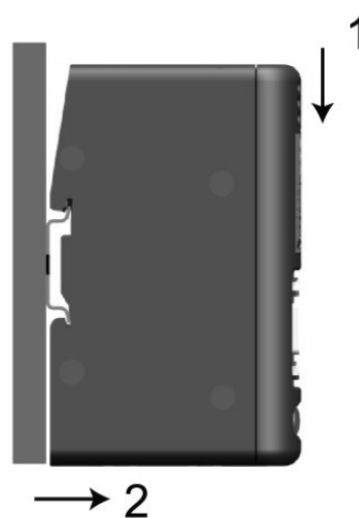


Fig 3:

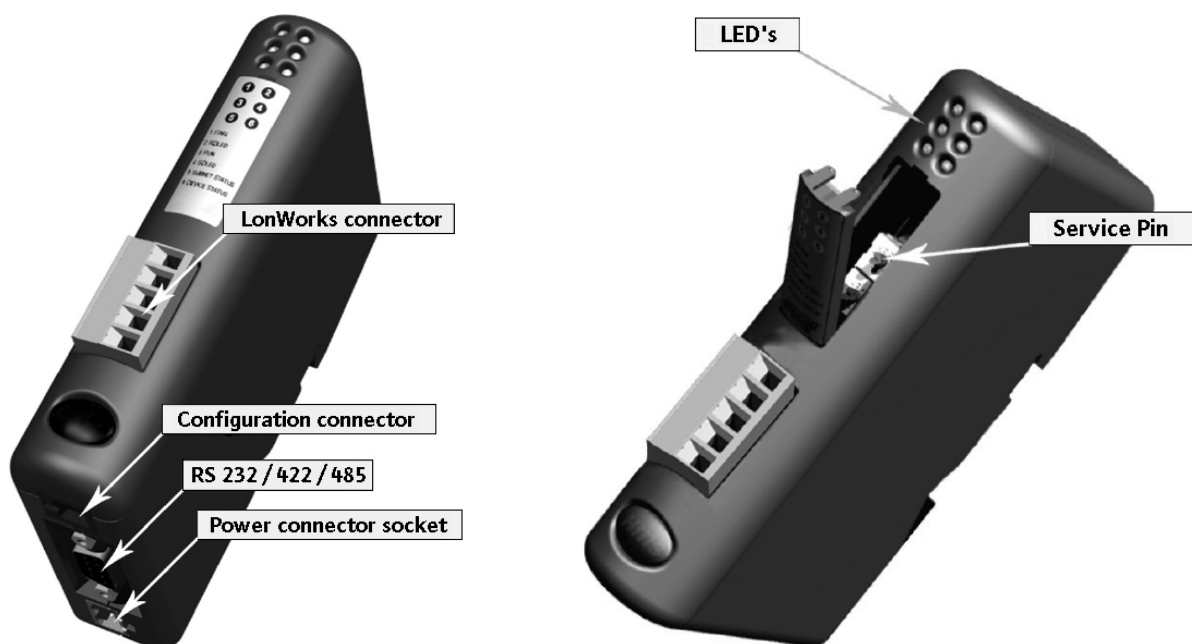


Fig 4:

Pin	Description
1	+24V DC
2	GND

Pin	Description	RS232	RS422	RS485
1	+5V	✓	✓	✓
2	RS232 Rx	✓		
3	RS232 Tx	✓		
4	Not connected			
5	Ground	✓	✓	✓
6	RS422 Rx +		✓	
7	RS422 RX -		✓	
8	RS485 +/RS422 Tx+		✓	✓
9	RS485 -/RS422 Tx-		✓	✓

Pin	Description
1	Shield
2	-
3	-
4	Net B
5	Net A

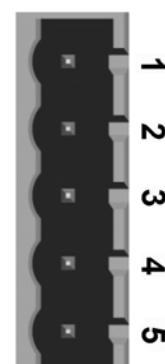
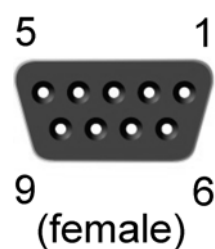
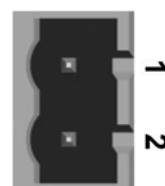


Fig 5:

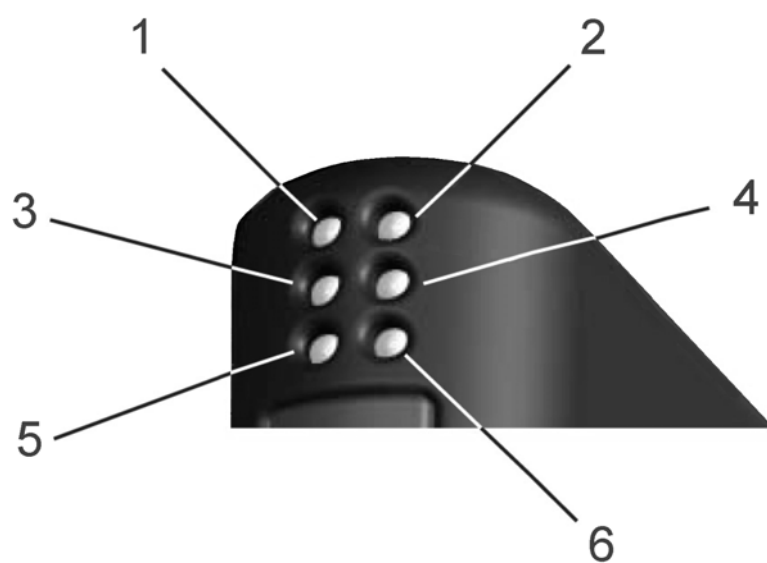
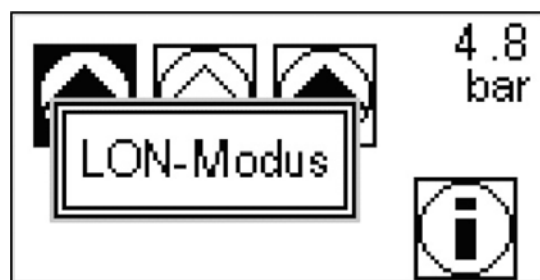


Fig 6:



GB

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1 General

About this document

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.

These installation and operating instructions correspond to the relevant version of the product and the underlying safety standards valid at the time of going to print.

2 Safety

These operating instructions contain basic information which must be adhered to during installation and operation. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible operator before installation and commissioning .

It is not only the general safety instructions listed under the main point "safety" that must be adhered to but also the special safety instructions with danger symbols included under the following main points.

2.1 Designation of information in the operating instructions

Symbols:



General danger symbol



Danger due to electrical voltage



NOTE: ...

Signal words:

DANGER!

Acutely dangerous situation.

Non-observance results in death or the most serious of injuries.

WARNING!

The user can suffer (serious) injuries. 'Warning' implies that (serious) injury to persons is probable if this information is disregarded.

CAUTION!

There is a risk of damaging the pump/unit. 'Caution' implies that damage to the product is likely if the information is disregarded.

NOTE:

Useful information on using the product. It draws attention to possible problems

2.2 Personnel qualifications

The installation personnel must have the appropriate qualification for this work.

2.3 Danger in event of non-observance of the safety instructions

Non-observance of the safety instructions can result in risk of injury to persons and damage to pump/unit. Non-observance of the safety instructions can result in the loss of any claims to damages.

In detail, non-observance of the safety instructions can, for example, result in the following risks:

- Failure of important pump/unit functions,
- Failure of required maintenance and repair procedures
- Danger to persons from electrical, mechanical and bacteriological influences,
- Property damage

2.4 Safety instructions for the operator

The existing directives for accident prevention must be adhered to.

Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and local power supply companies must be adhered to.

2.5 Safety instructions for inspection and installation work

The operator must ensure that all inspection and installation work is carried out by authorised and qualified personnel, who are sufficiently informed from their own detailed study of the operating instructions.

Work to the pump/unit must only be carried out when at a standstill.

2.6 Unauthorised modification and spare part production

Modifications to the pump/unit are only permissible after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of other parts can nullify the liability from the results of their usage

2.7 Improper use

The operating safety of the supplied pump/unit is only guaranteed for conventional use in accordance with Section 4 of the operating instructions. The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3 Transport and interim storage



CAUTION! Danger of material damage

Danger of damage due to incorrect handling during transport and storage.

The module must be protected from moisture and mechanical damage. It must not be exposed to temperatures outside the range of -10°C to +55°C.

4 Intended use

The CC LON module is used to link a CC system to a LON network. Setpoints, operating modes and switching commands for the CC system can be specified via the LON bus. Operating data, status and fault signals are transmitted from the CC system.

5 Product information

5.1 Type key

Example:	CC LON module
CC	ComfortController
LON	LON network interface
Module	Retrofittable module

5.2 Technical data

Dimensions (Figure 1):	120mm x 75mm x 27mm (LxWxH)
Power supply:	24 volt/ DC
Max. current consumption:	30 mA
Permitted ambient temperature:	0 to +55°C
Humidity:	0-95%, non-condensing
Protection class:	IP20
Fixing type	Top-hat rail fitting

5.3 Scope of delivery

On delivery of a CC system with optional LON module, the module is included in the switchgear ready wired and configured.

6 Description and function

6.1 Description of the product

The LON interface complies with the following standards:

LonMark Application Layer Interoperability Guidelines version 3.3

LonMark Layers 1-6 Interoperability Guidelines version 3.3

LonMark Device Resource Files version 13.00

Transceiver:	Bus cable:	Max. length of bus cable:
FTT10A	JY(St) Y 2x2x0.8	<ul style="list-style-type: none"> ■ 900m with bus topology with max. 3m spur lines ■ 450m with free topology, here max. 250m between 2 communicating nodes

The LON interface is delivered with the “Application configured” status.

6.2 Function of the product

6.2.1 Objects

Only 1 object is realised in the LON interface of the CC system, namely the CC system controller object.

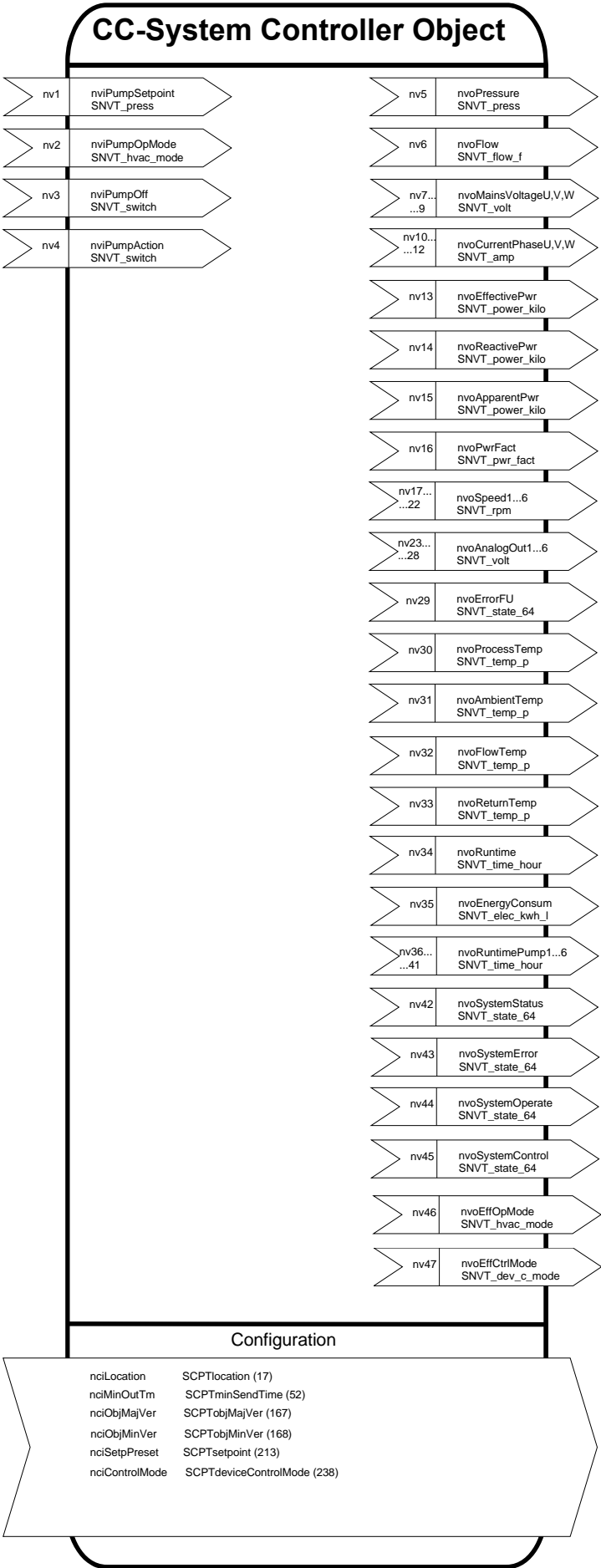
6.2.2 Program ID

The software of the LON interface has the program ID: 9F:FF:CC:50:00:0A:04:01.

6.2.3 Network variables

The diagram provides an overview of the network variables contained in the LON interface of the CC system.

Please note that for certain data items accessories such as current transformers must be available in the switchgear.



6.2.3.1 Details on network variables

Inputs

Input- Networkvariable	Mand. Opt.	NVT	Object	No.	Receive Heartbeat	Data Range and Units	Resolution	Default Value	Invalid Data	Range et effective Salmson resolution
nviPumpSetpoint	M	SNVT_press	0	1	no	-3276.8 – 3276.6 kPa	0.1 kPa	0.0 kPa	3276.7 kPa (0x7FFF)	Range depends on Pumptype. Resolution 0.981 kPa.
nviPumpOpMode	O	SNVT_hvac_mode	0	2	no	enum 0-17 (hvac_t)	-	HVAC_AUTO	HVAC_NUL (0xFF)	HVAC_AUTO HVAC_MRNG_WRMUP HVAC_PRE_COOL HVAC_ECONOMY HVAC_OFF HVAC_NUL
nviPumpOff	M	SNVT_switch	0	3	no	.state: 0, 1, -1 .value: 0.0 – 100.0%	-	.state: 0 .value: 0.0%	.state: -1 (0xFF)	.state: 0, 1 .value: 0.0 – 100.0%
nviPumpAction	O	SNVT_switch	0	4	no	.state: 0, 1, -1 .value: 0.0 – 100.0%	-	.state: 0 .value: 0.0%	.state: -1 (0xFF)	.state: 0, 1 .value: 0.0 – 100%

Outputs

Output- Networkvariable	Man Opt	NVT	Obj	No.	Ack	Minimum Send Time	Data Range and Units	Resolution	Invalid Data	Range et effective Salmsom resolution	Send when value changes more than
nvoPressure	M	SNVT_press	0	5	yes	yes	-3276.8 – 3276.6 kPa	0.1 kPa	3276.7 0x7FFF	Range depends on Pumptype Res: 0.981 kPa	5 % of max. Pressure
nvoFlow	O	SNVT_flow_f	0	6	no	yes	-3.40282E38 .. 3.40282E38 l/s	-	-	Range depends on Pumptype Res: 100 l/s	5 % of max. Flow
NvoMainsVoltage U,-V,-W	O	SNVT_volt	0	7-9	no	yes	-3276.8 .. 3276.7 V	0.1 V	-	0 – 3276.7V Res: 1 V	10V
NvoCurrentPhase U,-V,-W	O	SNVT_amp	0	10- 12	no	yes	-3276.8 .. 3276.7 A	0.1 A	-	0 – 3276.7A Res: 0.1 A	5 % of max. Current
nvoEffectivePwr	O	SNVT_power_kilo	0	13	no	yes	0 – 6553.5 kW	0.1 kW	-	0 – 6553.5 kW Res: 0.1 kW	5 % of max. Power
nvoReactivePwr	O	SNVT_power_kilo	0	14	no	yes	0 – 6553.5 kW	0.1 kW	-	0 – 6553.5 kW Res: 0.1 kW	5 % of max. Power
nvoApparentPwr	O	SNVT_power_kilo	0	15	no	yes	0 – 6553.5 kW	0.1 kW	-	0 – 6553.5 kW Res: 0.1 kW	5 % of max. Power
nvoPwrFact	O	SNVT_pwr_fact	0	16	no	yes	-1.00000 .. 1.00000	0.00005	-	-	0.01
NvoSpeed 1...-...6	O	SNVT_rpm	0	17- 22	no	yes	0 – 65535 rpm	1 rpm	-	0 – 65535 rpm Res: min.1 rpm	5 % of max. Speed
NvoAnalogOut 1...-...6	O	SNVT_volt	0	23- 28	no	yes	-3276.8 .. 3276.7 V	0.1 V	-	0 – 3276.7V Res: 0.1 V	0.5V
nvoErrorFU	O	SNVT_state_64	0	29	no	yes	bitset	-	-	Bit0-5: FU-general fault Bit6-11: Overtemp. Bit12-17: Overcurrent Bit18-23: Overvoltage Bit24-29: Power sag	immediate
nvoProcessTemp	O	SNVT_temp_p	0	30	no	yes	-273.17 – 327.66 °C	0.01 °C	327.67 0x7FFF	-273.17 – 327.66°C Res: min. 0.1 °C	3 °C
nvoAmbientTemp	O	SNVT_temp_p	0	31	no	yes	-273.17 – 327.66 °C	0.01 °C	327.67 0x7FFF	-273.17 – 327.66°C Res: min. 0.1 °C	3 °C
nvoFlowTemp	O	SNVT_temp_p	0	32	no	yes	-273.17 – 327.66 °C	0.01 °C	327.67 0x7FFF	-273.17 – 327.66°C Res: min. 0.1 °C	3 °C
nvoReturnTemp	O	SNVT_temp_p	0	33	no	yes	-273.17 – 327.66 °C	0.01 °C	327.67 0x7FFF	-273.17 – 327.66°C Res: min. 0.1 °C	3 °C
nvoRuntime	O	SNVT_time_hour	0	34	no	yes	0 – 65535 h	1 h	-	0 – 65535 h Res: 1 h	1 h

Output- Networkvariable	Man Opt	NVT	Obj	No.	Ack	Minimum Send Time	Data Range and Units	Resolution	Invalid Data	Range et effective Salmson resolution	Send when value changes more than
nvoEnergyConsum	O	SNVT_elec_kwh_ l	0	35	no	yes	-214748364.8 .. 214748364.6 kWh	0.1 kWh	0x7FFF FFFF	0 – 214748364.6 kWh Res: min. 0.1 kWh	1 kWh
NvoRuntimePump 1...-...6	O	SNVT_time_hour	0	36- 41	no	yes	0 – 65535 h	1 h	-	0 – 65535 h Res: 1 h	1h
nvoSystemStatus	M	SNVT_state_64	0	42	yes	yes	bitset	-	-	bit0: Operation bit1: Error bit2: Supply error electr. bit3: Supply error hydr. bit4: Automatic operation bit5: Manual operation bit6: Ext. off bit7: Control upper limit bit8: Control lower limit bit9: Setpoint out of range bit10: Sensor cable interr. bit11: Pump more bit12: Pump less	immediate
nvoSystemError	O	SNVT_state_64	0	43	no	yes	bitset	-	-	bit 0-5 for pump 1-6	immediate
nvoSystemOperate	O	SNVT_state_64	0	44	no	yes	bitset	-	-	bit 0-5 for pump 1-6	immediate
nvoSystemControl	O	SNVT_state_64	0	45	no	yes	bitset	-	-	bit 0-5 for pump 1-6	immediate
nvoEffOpMode	M	SNVT_hvac_mod e	0	46	yes	yes	enum 0-17 (hvac_t)	-	HVAC_ NUL 0xFF	HVAC_AUTO HVAC_MRNG_WRMUP HVAC_PRE_COOL HVAC_ECONOMY HVAC_OFF	immediate
nvoEffCtrlMode	M	SNVT_dev_c_mo de	0	47	yes	yes	enum 0 – 7 (device_c_mode_t)	-	DCM_ NUL 0xFF	DCM_PRESS_CONST DCM_PRESS_COMP DCM_FLOW_CONST DCM_TEMP_CONST DCM_TEMP_COMP DCM_PRESS_AUTO	immediate

Configuration inputs

Input Configuration Variable	Mandatory / Optional / User	CPT	Object	Number	Range et effective Salmson resolution
nciControlMode	M	SCPTdeviceControlMode	0	238	DCM_PRESS_CONST DCM_PRESS_COMP DCM_FLOW_CONST DCM_TEMP_CONST DCM_TEMP_COMP DCM_PRESS_AUTO
nciLocation	O	SCPTlocation	0	17	-
nciMinOutTm	O	SCPTminSendTime	0	52	0-6553s eff. Res: 1s
nciSetpPreset	M	SCPTsetpoint	0	213	Inherited from nviSetpoint

Configuration outputs

Output Configuration Variable	Mandatory / Optional	CPT	Object	Number	Value
nciObjMajVer	O	SCPTobjMajVer	0	167	01
nciObjMinVer	O	SCPTobjMinVer	0	168	00

6.2.3.2 Pump setpoint

network input SNVT_press nviPumpSetpoint

This input network variable is used to specify a differential pressure setpoint.

However, this setpoint has no function in the DCM_FLOW_CONST, DCM_TEMP_CONST, DCM_TEMP_COMP, DCM_PRESS_AUTO control types.

Value range:

0–3276.6 kPa (in 0.1kPa steps). The value 3276.7 kPa (0x7FFF) is an invalid value.

Starting value:

0.0 kPa

6.2.3.3 Requested pump-operating mode

network input SNVT_hvac_mode nviPumpOpMode

This input network variable is used to specify an operating mode. If an operating mode is specified that is not defined, the CC system switches to HVAC_AUTO mode.

Value range

Value	Function	Comment
HVAC_AUTO	Normal mode	Setpoint via nviPumpSetpoint
HVAC_MRNG_WRMUP	Warm-up mode	Maximum speed
HVAC_PRE_COOL	Cool-down mode	Maximum speed
HVAC_ECONOMY	Energy-saving mode	Speed-reduction mode (pump-type-specific)
HVAC_NUL	Invalid	LON presets can be overridden by local presets (set-up mode)

Starting value: HVAC_AUTO

6.2.3.4 Pump off command

network input SNVT_switch nviPumpOff

This input network variable provides a switch-on/switch-off function for all pumps at the same time. The network variable consists of a status byte and a value byte.

Value range

Status	Value	Function
0	0.0–100%	NORMAL
1	0.0%	NORMAL
1	0.5–100%	STOP
-1	0.0–100%	Invalid (NORMAL)

Starting value: status = 0, value = 0

6.2.3.5 Pump action

network input SNVT_switch nviPumpAction

This input network variable is used to specify commands. The network variable consists of a status byte and a value byte.

Value range

Status	Value	Function	Comment
0	0.0–100%	Normal mode	
1	0.0%	Change base-load pump	After changing the base-load pump: normal mode with a new base-load pump
1	1.0%	Perform pump kick	After the end of the pump kick: automatic normal mode. Kick is only started if no pump is currently running. The pump then only runs for approx. 10 sec. On every start different pump is started cyclically.
1	2.0%	Reset collective fault signal	After resetting the SSM: normal mode as far as possible. On a new fault the SSM is set again.
1	3.0%	One pump more	System runs with one pump more than the current status. The status is signalled in the system status. Back to normal position only via normal mode, further pump switched on via “status 1, value 5”
1	4.0%	One pump less	System runs with one pump less than the current status. The status is signalled in the system status. Back to normal position only via normal mode, further pump switched off via “status 1, value 5”
1	5.0%	Further command to switch pumps on or off to follow	No function, only holds current status
-1	0.0–100%	Invalid value (normal mode)	

Starting value: status = 0, value = 0

6.2.3.6 Pump pressure

network output SNVT_press nvoPressure

This output network variable provides the differential pressure determined by the CC system between the pump flanges.

Value range

0–3276.6 kPa (in 0.1kPa steps). The value 3276.7 kPa is an invalid value.

Transmission

This value is automatically transmitted if the deviation from the value previously transmitted is more than 5% of the maximum differential pressure (pump-specific).

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: acknowledged

6.2.3.7 Pump flow

network output SNVT_flow_f nvoFlow

This output network variable provides the flow determined by the CC system.

Value range

0–3.40282 E38 l/s in 100l resolution.

Transmission

This value is automatically when the deviation from the value previously transmitted is more than 5% of the maximum volume flow (system-specific).

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.8 Mains voltage U, V, W

network output SNVT_volt nvoMainsVoltageU, -V, -W

These output network variables provide the phase to neutral voltage in phases U, V and W.

Value range

0–3276.7V

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 10V.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.9 Mains current U, V, W

network output SNVT_amp nvoCurrentPhaseU, -V, -W

These output network variables provide the phase current in phases U, V and W.

Value range

0–3276.7A

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 5% of the maximum value of the current consumption of the CC system for one phase.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.10 Effective power consumption

network output SNVT_power_kilo nvoEffectivePwr

This output network variable provides the effective power consumption of the CC system.

Value range

0–6553.5 kW (in 0.1 kW steps).

Transmission

This value is automatically transmitted if the deviation from the value previously transmitted is more than 5% of the maximum power consumption of the system.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.11 Reactive power consumption

network output SNVT_power_kilo nvoReactivePwr

This output network variable provides the reactive power consumption of the CC system.

Value range

0–6553.5 kW (in 0.1 kW steps).

Transmission

This value is automatically transmitted if the deviation from the value previously transmitted is more than 5% of the maximum power consumption of the system.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.12 Apparent power consumption

network output SNVT_power_kilo nvoApparentPwr

This output network variable provides the apparent power consumption of the CC system.

Value range

0–6553.5 kW (in 0.1 kW steps).

Transmission

This value is automatically transmitted if the deviation from the value previously transmitted is more than 5% of the maximum power consumption of the system.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.13 Power factor

network output SNVT_pwr_fact nvoPwrFact

This output network variable provides the power factor of the CC system.

Value range

–1.00000–1.00000 (in 0.00005 steps).

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 0.01.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.14 Pump speed 1...6

network output SNVT_rpm nvoSpeed1...6

These output network variables provide the speeds of the pumps.

Value range

0–65535 revolutions/minute (in 1 rpm steps).

Transmission

This value is automatically transmitted if the deviation from the value previously transmitted is more than 5% of the maximum speed (pump-specific).

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.15 Analogue out 1...6

network output SNVT_volt nvoAnalogOut1...-...6

These output network variables provide the 0–10V analogue output of the individual pumps.

Value range

0–3276.7V in 0.1V resolution

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 0.5V.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.16 Frequency converter error

network output SNVT_state_64 nvoErrorFU

This output network variable provides bit-coded fault signals of the frequency converter.

Bit	Meaning if bit set
0 – 5	Frequency converter collective fault signal of pump 1–6
6 – 11	Frequency converter excess temperature of 1–6
12 – 17	Frequency converter excess current of pump 1 – 6
18 – 23	Frequency converter overvoltage of pump 1 – 6
24 – 29	Frequency converter undervoltage of pump 1 – 6

On systems with just one frequency converter that runs alternately on different pumps, the frequency converter fault is always assigned to pump 1!

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.17 Process temperature

network output SNVT_temp_p nvoProcessTemp

This output network variable provides the process temperature.

Value range

-273.17–327.66°C (in 0.01°C steps). The value 327.67°C is an invalid value.

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 3°C.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.18 Ambient temperature

network output SNVT_temp_p nvoAmbientTemp

This output network variable provides the ambient temperature.

Value range

-273.17–327.66°C (in 0.01°C steps). The value 327.67°C is an invalid value.

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 3°C.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.19 Flow temperature

network output SNVT_temp_p nvoFlowTemp

This output network variable provides the flow temperature.

Value range

-273.17–327.66°C (in 0.01°C steps). The value 327.67°C is an invalid value.

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 3°C.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.20 Return temperature

network output SNVT_temp_p nvoReturnTemp

This output network variable provides the return temperature.

Value range

-273.17–327.66°C (in 0.01°C steps). The value 327.67°C is an invalid value.

Transmission

This value is automatically transmitted if the deviation from the previously transmitted value is more than 3°C.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.21 Runtime

network output SNVT_time_hour nvoRuntime

This output network variable provides the working hours of the CC system. After 65535 hours the count returns to 0 hours.

Value range

0–65535 hours (in 1 hour steps), (max. 2730 days or 7.48 years).

Transmission

This value is transmitted with every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.22 Energy consumption

network output SNVT_elec_kwh_l nvoEnergyConsum

This optional output network variable provides the energy consumption of the CC system. After 214748364.6 kWh the count returns to 0 kWh.

Value range

0–214748364.6kWh (in 0.1 kWh steps).

Transmission

This value is transmitted with a modification of 1kWh.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.23 Runtime pump 1...6

network output SNVT_time_hour nvoRuntimePump1...6

These output network variables provide the working hours of the pumps. After 65535 hours the count returns to 0 hours.

Value range

0–65535 hours (in 1 hour steps), (max. 2730 days or 7.48 years).

Transmission

This value is transmitted with every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.24 System status

network output SNVT_state_64 nvoSystemStatus

This output network variable provides the bit-coded status of the CC system.

Bit	Meaning if bit set
0	Collective run signal
1	Collective fault signal
2	Electrical supply fault
3	Hydraulic supply fault
4	Automatic
5	Manual mode
6	External off
7	Upper control limit
8	Lower control limit
9	Setpoint out of range
10	Broken sensor cable
11	"Pump more" specified via nviPumpAction. Reset via "Normal mode".
12	"Pump less" specified via nviPumpAction. Reset via "Normal mode".
13–63	Reserved

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: acknowledged

6.2.3.25 System error

network output SNVT_state_64 nvoSystemError

This output network variable provides the bit-coded fault signals of the CC system.

Bit	Meaning if bit set
0	Fault on pump 1
1	Fault on pump 2
2	Fault on pump 3
3	Fault on pump 4
4	Fault on pump 5
5	Fault on pump 6
6–63	Reserved

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.26 System operation

network output SNVT_state_64 nvoSystemOperate

This output

network variable provides bit-coded run signals of the individual pumps.

Bit	Meaning if bit set
0	Pump 1 is running
1	Pump 2 is running
2	Pump 3 is running
3	Pump 4 is running
4	Pump 5 is running
5	Pump 6 is running
6–63	Reserved

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.27 System control

network output SNVT_state_64 nvoSystem Control

This output network variable provides a bit-coded signal about which pumps in the system are controlled via a frequency converter and which are uncontrolled.

Bit	Meaning if bit set
0	Pump 1 controlled
1	Pump 2 controlled
2	Pump 3 controlled
3	Pump 4 controlled
4	Pump 5 controlled
5	Pump 6 controlled
6-63	Reserved

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: unacknowledged

6.2.3.28 Effective operating mode

network output SNVT_hvac_mode nvoEffOpMode

This output network variable provides the effective operating mode of the CC system. This value corresponds to the setting in the nviPumpOpMode input network variable if no other operating mode is imposed via local settings.

Value range

Value	Function	Comment
HVAC_AUTO	Normal mode	Setpoint via nviPumpSetpoint
HVAC_MRNG_WRMUP	Warm-up mode	Maximum speed
HVAC_PRE_COOL	Cool-down mode	Maximum speed
HVAC_ECONOMY	Energy-saving mode	Speed-reduction mode (pump-type-specific)
HVAC_OFF	Offline mode	Ext. setting
HVAC_NUL	Invalid	

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: acknowledged

6.2.3.29 Effective device-control mode

network output SNVT_dev_c_mode nvoEffCtrlMode

This output network variable provides the effective device-control mode of the CC system.

Value range

Value	Function
DCM_PRESS_CONST	Constant differential pressure
DCM_PRESS_COMP	Differential pressure dependent on volume flow
DCM_FLOW_CONST	Constant flow
DCM_TEMP_CONST	Constant differential temperature
DCM_TEMP_COMP	Differential temperature dependent on volume flow
DCM_PRESS_AUTO	Control via local setting
DCM_NUL	Invalid

Transmission

This value is automatically assigned on every modification.

Transmission frequency

By describing the configuration input nciMinOutTm with a valid clock, the minimum time between two transmissions of a network variable can be set.

Preset service type: acknowledged

6.2.3.30 Location label

network input config SNVT_str_asc nciLocation

This optional input configuration network variable can be used to save information on the installation site of the CC system that is longer than the 6 byte information string saved on the Neuron chip.

Value range

Optional, NULL terminated ASCII string of max. 31 bytes in length.

Starting value

SALMSON CC-System

SCPT Reference: SCPT_location (17)

6.2.3.31 Minimum send time

network input config SNVT_time_sec nciMinOutTm

This optional input configuration network variable defines a minimum time pulse for the automatic transmission of network variables. Normally the network variables are transmitted automatically if they have changed or when they have changed by a minimum amount. This network variable now means that two send events only occur in the predefined interval. This helps to reduce the network load, for example. The individual network variables are sent cyclically.

Value range

0.0–6553.4 sec (in 0.1 sec steps). The value 0.0sec switches the minimum time pulse off. The invalid value 6553.5sec triggers the same behaviour as the value 0.0sec.

Starting value

0.0 sec

SCPT Reference: SCPTminSendTime (52)

6.2.3.32 Object major version

network output config unsigned short nciObjMajVer

This output configuration network variable provides the highbyte of the software version.

SCPT Reference: SCPTobjMajVer (167)

6.2.3.33 Object minor version

network output config unsigned short nciObjMinVer

This output configuration network variable provides the lowbyte of the software version.

SCPT Reference: SCPTobjMinVer (168)

6.2.3.34 Setpoint preset

network input config SNVT_press nciSetpPreset

This input configuration network variable specifies a starting value for nviPumpSetpoint.

Value range

0–3276.6 kPa (in 0.1kPa steps). The value 0x7FFF is invalid.

Starting value

0.0 kPa

SCPT Reference: SCPTsetpoint (213)

6.2.3.35 Control mode

network input config SNVT_dev_c_mode nciControlMode

This input configuration network variable specifies the control type for normal mode of the CC system. If a control type that is invalid for the respective CC system is specified, the last control type set is retained.

Value range

Value	Function
DCM_PRESS_CONST	Constant differential pressure
DCM_PRESS_COMP	Differential pressure dependent on volume flow
DCM_FLOW_CONST	Constant flow
DCM_TEMP_CONST	Constant differential temperature
DCM_TEMP_COMP	Differential temperature dependent on volume flow
DCM_PRESS_AUTO	Control via local setting
DCM_NUL	Invalid

Starting value

DCM_PRESS_CONST

SCPT Reference: SCPTdeviceControlMode (238)

6.2.4 Local operation in LON mode

Local operability of the switchgear is blocked in LON mode. The main screen is displayed permanently on the touch display and the LON mode is signalled via a flashing signal (Figure 6).

Local operability can be cleared via the following actions:

Cancel the RS232 connection between CPU and gateway

Send operating mode HVAC_NUL via LON (g_dutSALMSON_LON_Controller.nviPumpOpMode- 16#00FF)

7 Installation and electrical connection

7.1 Installation

On installation, network variables must be linked to the network variables of other nodes. This requires a corresponding network management tool. A LON network based on the FTT 10A transceiver must be available.



NOTE: The installation should always be performed by a network administrator!

1. Snap the module on to the top-hat rail (Figure 2)
2. Connect the LONWORKS cable (Figure 3/Figure 4)
3. Connect the serial interface cable RS232 to the SPS (Figure 3/Figure 4)
4. Connect the power supply to the gateway (Figure 3/Figure 4)
5. Switch on the power supply

The identification of the LON interface required for the installation occurs via the bonded label with the code of the 128 bar code of the Neuron ID. Half of the label can be stuck to an installation plan.

The LON interface uses self-documentation, i.e. the description of the network variables contained in the LON interface is saved in the module and is evaluated using network management tools. Corresponding XIF files are also available.

On the hardware side the LON interface has a service switch (behind the orifice below the LEDs, see Figure 3) and a service LED (see position 1/Figure 5). This switch can be used for example to identify the LON node in the network. The status of the node can be read from the service LED.

7.2 Electrical connection

Connect the module to 24 volt/DC

Connect serial interface RS 232 to SPS

Attention: After a power failure, the contents of the input network variables (nvi...) are deleted and revert to the starting values!

8 Commissioning

A blink command is signalled via a red LED (Pos.2 /Figure 5) that flashes for around 20 sec.

9 Maintenance

Keep the unit clean

10 Faults, causes and remedies

Fault	Cause	Remedy
Green LED 1 (Figure 5) "Service"	Flashing green light: module not configured	Configure module via LON network tool
	Permanent green light: module not configured and without application	Replace module
Green/red LED 4 (Figure 5) "Module status"	Flashing red light: software fault	Restart (interrupt 24 volt supply, wait 5 sec. and reconnect power supply)
	Permanent red light: hardware fault	Replace module
Green/red LED 5 (Figure 5) "ModBus activity"	Permanent red light: connection to SPS interrupted	Check wiring or SPS
Green/red LED 6 (Figure 5) "Config Error"	Flashing red light: no configuration saved in gateway	Replace module

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11 Spare parts

In order to avoid return queries and incorrect orders, specify for each order all data on the name plate

Spare parts are ordered via local specialists and/or Salmsen After-Sales

Subject to change without prior notice!