thermokon®

HOME OF SENSOR TECHNOLOGY

Description of the USE LON interface

LK+
LA+
Li65+
DPA+
AGS55+
AKF10+
LDF+
MWF+

Revision

Revision	Date	Description	Editor
A	05.03.2020	First issue	FA
B	18.05.2020	various additions	DF
C	05.11.2020	AKF10+, LDF+ added	DF
D	25.02.2021	MWF+ added	DF

Table of Contents

Uni_Use_01

for USE Uni_LON Devices

1 Overview

The application supports the output of temperature, humidity, CO2, VOC, brightness and pressure for various devices. The measured values are output via standard network variables (SNVT), subdivided into the corresponding function blocks. The specifications of the LonMark® function profiles **1040 "Temperature Sensor", 1050 "Relative Humidity Sensor", 1070 "CO2 Sensor", 1010 "Light Sensor"** and **1030 "Pressure Sensor"** were taken into account. For advanced settings, standard configuration parameters (SCPT) are used. The parameters used here are defined in the Thermokon Device Resource Files version 2.3 or higher.

Supported Devices:

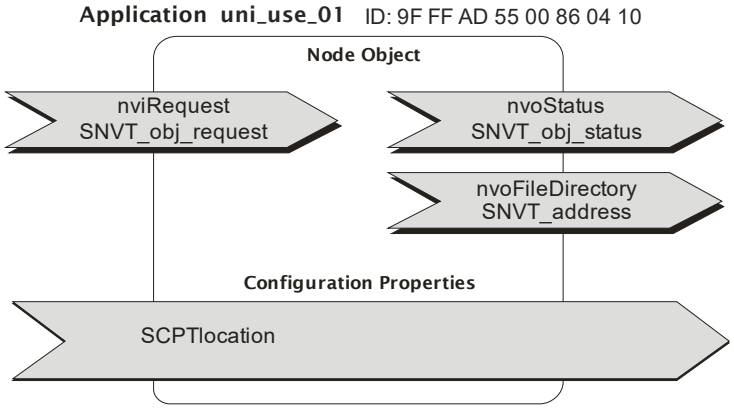
- LK+ Temp rH CO2 VOC LCD
- LA+ Temp rH CO2 VOC LCD
- Li65+ Temp rH
- DPA2500+ LCD
- AGS55+
- AKF10+
- LDF+
- MWF+

1.1 Integration

The device can be commissioned via the service pin on the inside of the uni_LON board or manual entry of the Neuron ID.

2 Node Object

The Node Object monitors the functions of the individual objects in the device. The basic functionality required by LonMark® is supported.



2.1 Input Variables Node Object

nviRequest

SNVT Type: SNVT_obj_request, Index 92
Function: Input variable with the functions RQ_NORMAL, RQ_UPDATE_STATUS and RQ_REPORT_MASK.

2.2 Output Variables Node Object

nvoStatus

SNVT Type: SNVT_obj_status, Index 93
Function: Output variables with the required status bits „invalid_id“ and „invalid_request“.

nvoFileDirectory

SNVT Type: SNVT_address, Index 114
Function: The output variable provides the address data of the configuration parameters in the device to the LON integration tool.

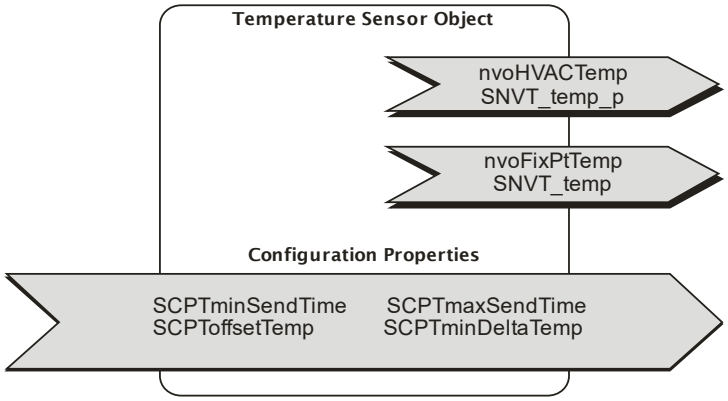
2.3 Configuration Parameter Node Object

SCPTlocation

SCPT Index: 17, SNVT_str_asc
Function: Additional input possibility to save information about location identification in the device.

3 Temperature Sensor Object

The object contains the function of temperature detection. The output of the measured variable takes place via network variables.



3.1 Output Variables Temperature Sensor Object

nvoHVACTemp

SNVT Type: SNVT_temp_p, Index 105
Function: Output variable for displaying the measured temperature value with a resolution of 1/100 °C. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

nvoFixPtTemp

SNVT Type: SNVT_temp, Index 39
Function: Output variable for displaying the measured temperature value with a resolution of 1/10 °C. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

3.2 Configuration Parameter Temperature Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. Defines the interval time after which the output variables are sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 300.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec

Function: Defines the smallest update interval of the output variables *nvoHVACTemp* and *nvoFixPtTemp*. An update takes place after *SCPTminSendTime* has elapsed, if the temperature value of the output variable has changed by more than *SCPTminDeltaTemp*. With an input value = 0, the function is deactivated. (Default value: 5.0 s)

SCPToffsetTemp

Index: 70, SNVT_temp_diff_p

Function: Offset for the temperature value. With this parameter, a software calibration is possible.

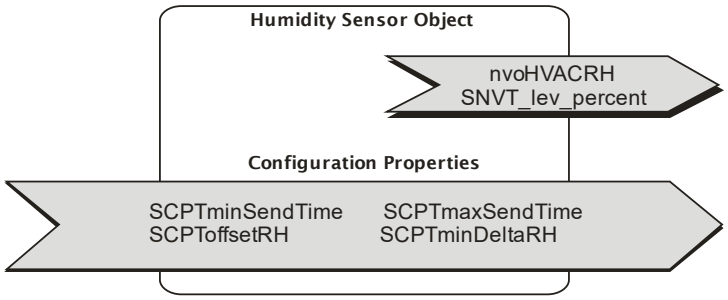
SCPTminDeltaTemp

Index: 64, SNVT_temp_p

Function: If the temperature changes by the set value *SCPTminDeltaTemp*, the new temperature value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 °C; preset value: 0.30 °C)

4 Humidity Sensor Object

The object contains the function of humidity detection. The output of the measured variable takes place via network variable.



4.1 Output Variable Humidity Sensor Object

nvoHVACRH

SNVT Type: SNVT_lev_percent, Index 81

Function: Output variable for displaying the measured humidity value. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

4.2 Configuration Parameter Humidity Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. Defines the interval time after which the output variable is sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 300.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec

Function: Defines the smallest update interval of the output variable *nvoHVACRH*. An update takes place after *SCPTminSendTime* has elapsed, if the humidity value of the output variable has changed by more than *SCPTminDeltaRH*. With an input value = 0, the function is deactivated. (Default value: 5.0 s)

SCPToffsetRH

Index: 69, SNVT_lev_percent

Function: Offset for the humidity value. With this parameter, a software calibration is possible.

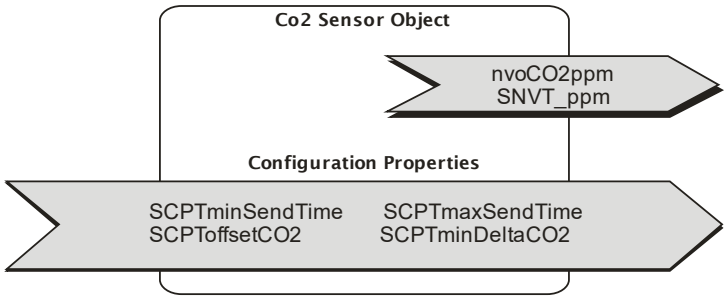
SCPTminDeltaRH

Index: 62, SNVT_lev_percent

Function: If the humidity changes by the set value *SCPTminDeltaRH*, the new humidity value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 %; preset value: 1.0 %)

5 CO2 Sensor Object

The object contains the function of CO2 detection. The output of the measured variable takes place via network variable.



5.1 Output Variable CO2 Sensor Object

nvoCO2ppm

SNVT Type: SNVT_ppm, Index 29

Function: Output variable for displaying the measured CO2 value. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

5.2 Configuration Parameter CO2 Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. Defines the interval time after which the output variable is sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 300.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec

Function: Defines the smallest update interval of the output variable *nvoCO2ppm*. An update takes place after *SCPTminSendTime* has elapsed, if the CO2 value of the output variable has changed by more than *SCPTminDeltaCO2*. With an input value = 0, the function is deactivated. (Default value: 5.0 s)

SCPToffsetCO2

Index: 68, SNVT_ppm

Function: Offset for the CO2 value. With this parameter, a software calibration is possible.

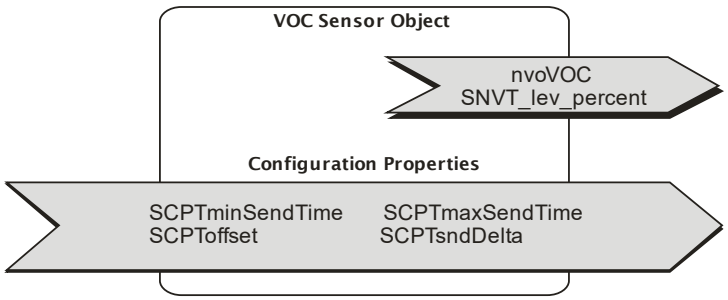
SCPTminDeltaCO2

Index: 63, SNVT_ppm

Function: If the CO2 value changes by the set value *SCPTminDeltaCO2*, the new CO2 value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 ppm; preset value: 10 ppm)

6 VOC Sensor Object

The object contains the function of VOC detection. The output of the measured variable takes place via network variable.



6.1 Output Variable VOC Sensor Object

nvoVOC

SNVT Type: SNVT_lev_percent, Index 81
Function: Output variable for displaying the measured VOC value. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

6.2 Configuration Parameter VOC Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec
Function: Heartbeat function. Defines the interval time after which the output variable is sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 300.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec
Function: Defines the smallest update interval of the output variable *nvoVOC*. An update takes place after *SCPTminSendTime* has elapsed, if the VOC value of the output variable has changed by more than *SCPTsndDelta*. With an input value = 0, the function is deactivated. (Default value: 5.0 s)

SCPToffset

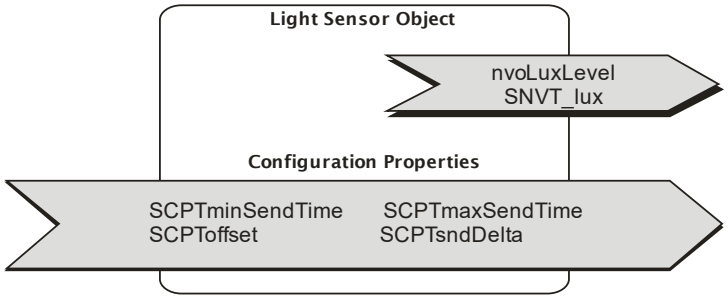
Index: 26, SNVT_lev_percent
Function: Offset for the VOC value. With this parameter, a software calibration is possible.

SCPTsndDelta

Index: 27, SNVT_lev_percent
Function: If the VOC value changes by the set value *SCPTsndDelta*, the new VOC value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 %; preset value: 1.0 %)

7 Light Sensor Object

The object contains the function of brightness detection. The output of the measured variable takes place via network variable.



7.1 Output Variable Light Sensor Object

nvoLuxLevel

SNVT Type: SNVT_lux, Index 79
Function: Output variable for displaying the measured VOC value. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

7.2 Configuration Parameter Light Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec
Function: Heartbeat function. Defines the interval time after which the output variable is sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 60.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec
Function: Defines the smallest update interval of the output variable *nvoLuxLevel*. An update takes place after *SCPTminSendTime* has elapsed, if the brightness value of the output variable has changed by more than *SCPTsndDelta*. With an input value = 0, the function is deactivated. (Default value: 1.0 s)

SCPToffset

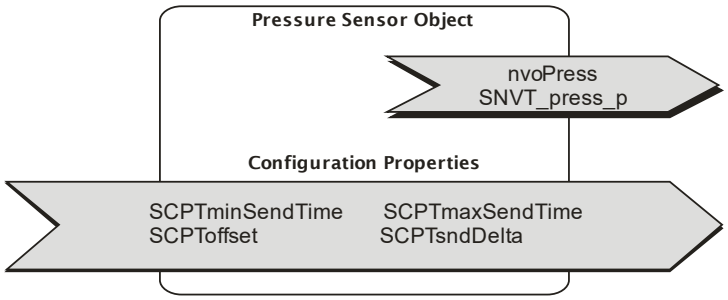
Index: 26, SNVT_lux
Function: Offset for the brightness value. With this parameter, a software calibration is possible.

SCPTsndDelta

Index: 27, SNVT_lux
Function: If the brightness value changes by the set value *SCPTsndDelta*, the new brightness value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 lux; preset value: 50 lux)

8 Pressure Sensor Object

The object contains the function of pressure detection. The output of the measured variable takes place via network variable.



8.1 Output Variable Pressure Sensor Object

nvoPress

SNVT Type: SNVT_press_p, Index 113
Function: Output variable for displaying the measured VOC value. The data output depends on *SCPTmaxSendTime* and *SCPTminSendTime*.

8.2 Configuration Parameter Pressure Sensor Object

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec
Function: Heartbeat function. Defines the interval time after which the output variable is sent. With an input value = 0, the heartbeat function is deactivated. (Default value: 300.0 s).

SCPTminSendTime

Index: 52, SNVT_time_sec
Function: Defines the smallest update interval of the output variable *nvoPress*. An update takes place after *SCPTminSendTime* has elapsed, if the pressure value of the output variable has changed by more than *SCPTsndDelta*. With an input value = 0, the function is deactivated. (Default value: 5.0 s)

SCPToffset

Index: 26, SNVT_press_p
Function: Offset for the pressure value. With this parameter, a software calibration is possible.

SCPTsndDelta

Index: 27, SNVT_press_p
Function: If the pressure value changes by the set value *SCPTsndDelta*, the new pressure value is transmitted. The function depends on the setting of the *SCPTminSendTime* parameter. (Value range >= 0 Pa; preset value: 50 Pa)