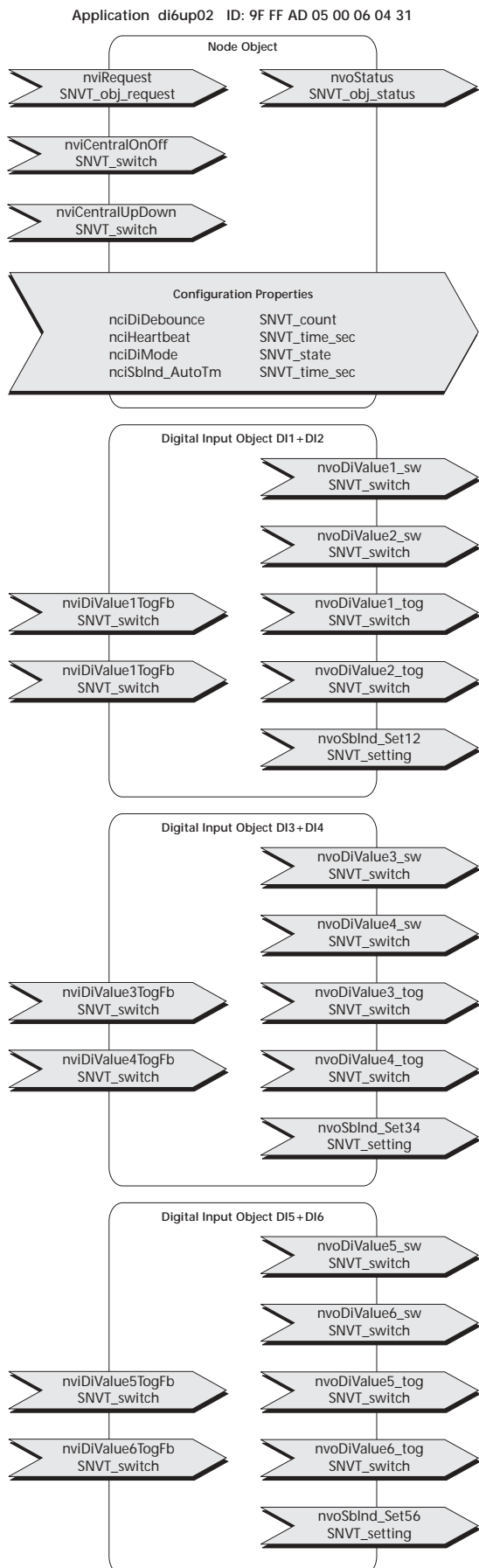


Software application di6up02 (Standard I/O, Toggle, Sunblind with SNVT_setting)

For input/output module. model DI6UP LON



Application for status recognition of digital inputs and data output. The digital inputs are put together in pairs as follows DI1+DI2, DI3+DI4, DI5+DI6. To realize the functions "Standard I/O", "Toggle" and "Shutter", different network variables are used for data output. Application uses Standard-Network Variables (SNVT), according to LonMark® prescriptions.

Central saturation: With the input variables nviCentralOnOff and nviCentralUpDown, the output variables for illumination and sunblind control, can temporarily controlled by a higher ranking regulator. For this period of time, the digital inputs are locked.

Standard I/O-function: Any digital input has the standard I/O-function, i.e. the status of the switching contact (open/closed) is output with SNVT_switch.

Toggle-function: Any digital input has a toggle function for illumination control, i.e. any actuation of the buttons results in a switch-over of the output variables between the values 0.0 and 100.0. If a light group should be controlled by different buttons, the current status of the light group can be sent back to the feedback variables.

Sunblind-function: Any object has output variables type SNVT_setting for control of LON sunblind actuators. Short-term button actuations (< nciSbld_AutoTm) are for the fine adjustment of the sunblind. When pressing the button for a longer period of time (> nciSbld_AutoTm), the automatic run is started and the sunblind is permanently controlled for 200 seconds.

Node Object

The Node Object supervises and controls the functions of the individual objects within the unit. Basic functions required by the LonMark® are supported.

Network variables Node Object:

nviRequest

SNVT Type: SNVT_obj_request

Function: Input variables including functions RQ_NORMAL, RQ_UPDATE_STATUS and RQ_REPORT_MASK.

nvoStatus

SNVT Type: SNVT_obj_status

Function: Output variables including required status bits „invalid_id“ and „invalid_request“.

nviCentralOnOff

SNVT Type: SNVT_switch

Function: Input variable for central main control of output variable to control illumination by means of toggle function. (Initializing value: nviCentralOnOff.state = -1)

nviCentralOnOff = 0.0 0 ==> nvoDiValueX_tog = 0.0 0 and DIs blocked

nviCentralOnOff = 100.0 1 ==> nvoDiValueX_tog = 100.0 1 and DIs blocked

nviCentralOnOff = x.x -1 ==> output variables are changed by status of DIs

nviCentralUpDown

SNVT Type: SNVT_switch

Function: Input variable for central main control of output variable for sunblind control. (Initializing value: nviCentralUpDown.state = -1)

nviCentralUpDown = 0.0 0 ==> nvoSblnd_SetXX = SET_DOWN, FF, 7FFF and DIs blocked

nviCentralUpDown = 100.0 1 ==> nvoSblnd_SetXX = SET_UP, FF, 7FFF and DIs blocked

nviCentralUpDown = x.x -1 ==> output variables are changed by status of DIs

All sunblind variables are reset when main control mode is left.

Configuration parameter Node Object:

nciDiDebounce

SNVT Type: SNVT_count

Function: Debounce period for digital inputs(in ms). Preset value: 30 (ms).

nciHeartbeat

SNVT Type: SNVT_time_sec

Function: Heartbeat interval. After expiration of nciHeartbeat all bound output variables are sent. Heartbeat function is deactivated with input values < 1 sec.(Default: 0)

nciDiMode

SNVT Type: SNVT_state

Function: Configuration parameter for determination of effective direction of digital inputs.

nciDiMode.bit0 = 0 ==> DI1 + DI2 = closed

nciDiMode.bit0 = 1 ==> DI1 + DI2 = open

nciDiMode.bit1 = 0 ==> DI3 + DI4 = closed

nciDiMode.bit1 = 1 ==> DI3 + DI4 = open

nciDiMode.bit2 = 0 ==> DI5 + DI6 = closed

nciDiMode.bit2 = 1 ==> DI5 + DI6 = open

(Pre-adjusted value: 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0)

nciSblnd_AutoTm

SNVT Type: SNVT_time_sec

Function: Configuration parameter for sunblind control. With acutation of push button > nciSblnd_AutoTm the automatic run is started. Actuation of button < nciSblnd_AutoTm for fine adjustment of sunblind, respectively for stopping the automatic run. (Pre-adjusted value: 2,0s)

Digital Input Object DI1 + DI2

The object includes the function measuring of digital inputs 1 + 2 with the functions **Standard I/O**, **Toggle** and **Sunblind**. The effective direction of inputs (break / make contact) can be adjusted via configuration parameter nciDiMode. The output variables for shutter control are blocked against each other. Switching of effective direction is only made after a delay of 500 ms in order to protect the shutter motors.

Netzwerkvariablen Digital Input Object DI1+DI2:

nviDiValue[1,2]TogFb

SNVT Type: SNVT_switch

Function: Input variables for present status of light groups triggered with nvoDiValue[1,2]_tog.

nvoDiValue[1,2]_sw

SNVT Type: SNVT_switch

Function: Status of digital inputs 1 + 2. Output variables are put out after change of input status, expiration of (nciHeartbeat) and module reset. Calculated period for output after module reset:
1s+([Nodenummer 1....127] x 10ms)

		nciDiMode.bit0=0	nciDiMode.bit0=1
Zero-potential contact closed	==> nvoDiValue[1,2]_sw =	100.0 1	0.0 0
Zero-potential contact open	==> nvoDiValue[1,2]_sw =	0.0 0	100.0 0

nvoDiValue[1,2]_tog

SNVT Type: SNVT_switch

Function: Output variable for switch status of digital inputs 1 + 2 including toggle funktion for triggering light groups by means of push button (brake contact). Each actuation results in a switching of output variables between 0.0 0 and 100.0 1. Data transmission is made in case of change of output variable value, after expiration of heartbeat interval (nciHeartbeat) and module reset.

nvoSbInd_Set12 (DI1 = UP, DI2 = DOWN)

SNVT Type: SNVT_switch

Function: Output variable with switch command „open“, „close“ und „stop“ for triggering of sunblind motors via a LON-sunblind-actuator.

nvoSbInd_Set12 = SET_STOP, FF, 7FFF ==> Switch command „STOP“

nvoSbInd_Set12 = SET_UP, FF, 7FFF ==> Switch command „UP“

nvoSbInd_Set12 = SET_DOWN, FF, 7FFF ==> Switch command „DOWN“

After long-term button actuation(> nciSbInd_AutoTm) the shutter is permanently triggered for 200 sec. (automatic run). The automatic run can be stopped by pressing any button. Short-term button actuation(<nciSbInd_AutoTm serves for fine adjustment of shutter.

Digital Input Object DI3 + DI4

The object includes the function measuring of digital inputs 3 + 4 with the functions **Standard I/O**, **Toggle** and **Sunblind**. The effective direction of inputs (break / make contact) can be adjusted via configuration parameter nciDiMode. The output variables for shutter control are blocked against each other. Switching of effective direction is only made after a delay of 500 ms in order to protect the shutter motors.

Net work variables Digital Input Object DI3 + DI4:

nviDiValue[3,4]TogFb

SNVT Type: SNVT_switch

Function: Input variables for present status of light groups triggered with nvoDiValue[3,4]_tog.

nvoDiValue[3,4]_sw

SNVT Type: SNVT_switch

Function: Status of digital inputs 3 + 4. Output variables are put out after change of input status, expiration of heartbeat interval (nciHeartbeat) and after module reset. Calculated period for output after module reset([Node number 1....127] x 10ms)

		nciDiMode.bit1=0	nciDiMode.bit1=1
Zero-potential contact closed	=> nvoDiValue[3,4]_sw =	100.0 1	0.0 0
Zero-potential contact open	=> nvoDiValue[3,4]_sw =	0.0 0	100.0 0

nvoDiValue[3,4]_tog

SNVT Type: SNVT_switch

Function: Output variables for switch status 3 + 4 with toggle function for triggering light groups by means of push-buttons (make contact or break). Each actuation results in a switching of output variables between 0.0 0 and 100.0 1. Data transmission is made in case of change of output variable value, after expiration of heartbeat interval (nciHeartbeat) and after module reset.

nvoSbld_Set34 (DI3 = UP, DI4 = DOWN)

SNVT Type: SNVT_switch

Function: Output variables with the switch instruction „open“, „close“ and „stop“ for triggering sunblind motors via a LON-sunblind-actuator.

nvoSbld_Set34 = SET_STOP, FF, 7FFF ==> switch instruction „STOP“

nvoSbld_Set34 = SET_UP, FF, 7FFF ==> switch instruction „UP“

nvoSbld_Set34 = SET_DOWN, FF, 7FFF ==> switch instruction „DOWN“

After long-term actuation of buttons (> nciSbld_AutoTm) the shutter is permanently triggered for 200 sec. (automatic run). The automatic run can be stopped by pressing any button.

A short-term actuation (< nciSbld_AutoTm) is for the fine adjustment of the shutter.

Digital Input Object DI5 + DI6

The object includes the function measuring of digital inputs 5 + 6 with the functions **Standard I/O**, **Toggle** and **Sunblind**. The effective direction of inputs (break / make contact) can be adjusted via configuration parameter nciDiMode. The output variables for shutter control are blocked against each other. Switching of effective direction is only made after a delay of 500 ms in order to protect the shutter motors.

Net work variables Digital Input Object DI5 + DI6:**nvoDiValue[5,6]_sw**

SNVT Type: SNVT_switch

Function: Status of digital inputs 5 + 6. Output variables are put out after change of input status, expiration of heartbeat interval (nciHeartbeat) and module reset. Calculated period for output after module reset: 1s + ([Nodenummer 1....127] x 10ms)

		nciDiMode.bit2=0	nciDiMode.bit2=1
Zero-potential contact closed	=> nvoDiValue[5,6]_sw =	100.0 1	0.0 0
Zero-potential contact open	=> nvoDiValue[5,6]_sw =	0.0 0	100.0 0

nvoDiValue[5,6]_tog

SNVT Type: SNVT_switch

Function: Output variable for switch status of digital inputs 5 + 6 with toggle function for triggering of light groups by means of push-button (make or break contact). Each actuation results in a switching of output variables between 0.00 and 100.0.1. Data transmission is made if output variable value is changed, after expiration of heartbeat interval (nciHeartbeat) and module reset.

nvoSbInd_Set56 (DI5 = UP, DI6 = DOWN)

SNVT Type: SNVT_switch

Function: Output variables with the switch command „open“, „close“ und „stop“ for control of sunblind motors via a LON-shutter-actuator.

nvoSbInd_Set56 = SET_STOP, FF, 7FFF ==> Switch command „STOP“

nvoSbInd_Set56 = SET_UP, FF, 7FFF ==> Switch command „UP“

nvoSbInd_Set56 = SET_DOWN, FF, 7FFF ==> Switch command „DOWN“

After long-term actuation (> nciSbInd_AutoTm) the shutter is permanently controlled for 200 sec. (automatic run). The automatic run can be stopped by pressing any push button.

A short-term actuation of buttons (< nciSbInd_AutoTm) serves for a fine adjustment of the shutter.

General Remarks:**Konfigurationsparameter**

A download of application overwrites manufacturer's configuration parameters.

The configuration variables are designed as bindable network variables stored in EEPROM. Thus parameter changes are possible even without installation tool.

!! An update of variables is directly written into the non-volatile memory of hardware. User has to make sure

!! that total number of writing cycles does not exceed maximum capacity of non-volatile

!! memory (dimension <10000).