

M7410G

LINEAR VALVE ACTUATORS WITH LON CAPABILITIES

PRODUCT DATA

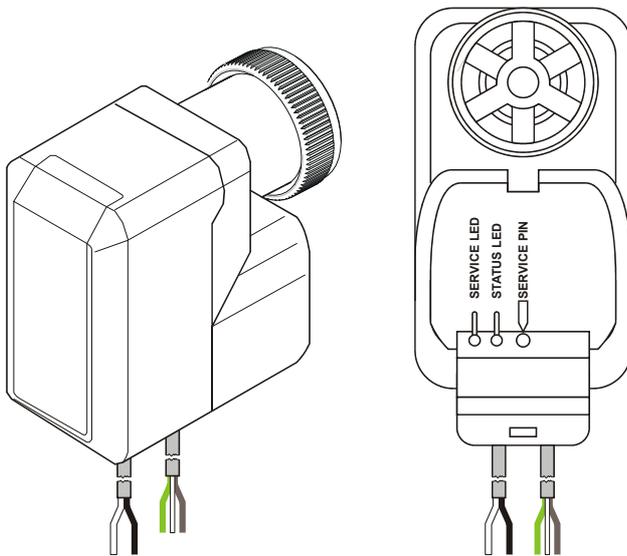


Fig. 1. M7410G Actuator

APPLICATION

The M7410G small linear actuator with LONWORKS capabilities is targeted for decentralized building structures and gives customers an effective new capability in energy management and product flexibility. The actuator works with standard SNVTs to provide interoperability with controllers based on LONWORKS technology.

The M7410G actuator is specifically designed to provide LonMark capabilities together with the radiator and zone valve series of small linear valves and are used in fan coil units, induction units, small reheaters, coolers, and for zone control applications. They are employed in electronic temperature control systems using hot and / or cold water as the controlled medium.

The M7410G actuator is suitable for Honeywell Excel series controllers as well as for any other LONWORKS controllers. Using standard Echelon configuration tools, the actuator can be configured with job-specific settings.

The M7410G actuator is well suited for applications where space is limited and minimum power consumption is required. The actuator is both attractive and robust in design.

FEATURES

- FTT10A communication
- Digital input may be used for window or humidity switch
- The actuator is a flexible tool and LONWORKS is a flexible platform
- Simplifying complex HVAC plants
- Simple wiring
- Open products for third-party integration
- Supplied with pre-wired connection cable
- Simple, standardized valve/actuator coupling
- No tools required for mounting
- Visual valve position indicator furnished with actuator
- Manual operation provided by valve adjustment cap
- High-precision proportional valve actuator

DEVICE SPECIFICATIONS

Input voltage:	24 Vac \pm 20%, 50/60 Hz	
Power consumption:	1.4 VA	
Input signal:	SNVT_lev_percent 0-100%	
Control mode:	LONWORKS (FTT10A)	
Stroke:	2.5 - 4 mm	6.5 mm
Running time:	75 s at 50 Hz 63 s at 60 Hz	150s at 50 Hz 120s at 60 Hz
Stem force:	see section "Versions" on pg. 2	
Protection standard:	IP 42	
Insulation class:	III	
Connection cable:	1.5 m	
Ambient operating temperature limits:	0 ... 55 °C	
Weight:	0.3 kg	
Suitable valves:	see section "Versions" on pg. 2	
Manual operation:	see section "Manual Override" on pg. 9	

OPERATION

The movement of the electric actuator is produced by a screw spindle which is driven in both directions by a synchronous motor through a set of gears. A magnetic clutch limits the torque of the gear assembly and the driving force of the actuator. The actuator is fixed to the valve body by means of a coupling ring requiring no tools for mounting. The actuator is maintenance-free and supplied completely with a ready-to-wire connecting cable.

VERSIONS

order no.	force	stroke	compatible valves
M7410G1008	90 N	3.5 mm	V100 (thermostatic valves) V5822A4 / V5823A4 V5832C4 / V5832A4 V5833A4 / V5833C4 VSOx-2/-3/-4
M7410G1016	180 N	6.5 mm	V5822A / V5832A V5823A / V5833A V5823C / V5833C VSMx-2/-3/-4
M7410G1024	300 N	6.5 mm	V5832B / V5833A V5872B / V5872D

PLUG-INS AND XIF FILES

External interface files and the plug-ins (device resource files included) can be downloaded at <http://www.honeywell.de/plugin>. For XIF-files, take the link to the LonMark server.

order no.	plug-in	XIF file
M7410G1008, M7410G1016, M7410G1024	ILONAS	ilona_s.xif

PLUG-INS

Plug-ins enable you to simplify start-up, maintenance, and configuration and to reduce the installation effort.

XIF FILES

An External Interface File (XIF file) including the whole LONWORKS interface of the device can be used, e.g., for off-line configuration or binding of the device via a LONWORKS Tool. For a detailed description, see section "LNS Plug-In Actuator Object".

MOUNTING POSITION

The actuator may be mounted only beside or above the valve. Adjust the valve in the correct position before mounting the actuator.

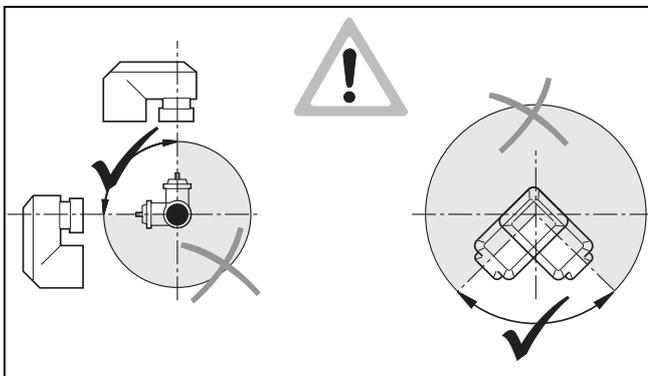


Fig. 2. Mounting positions

MOUNTING

Before the actuator is fixed to the valve, the adjustment cap must be removed (see Fig. 3). Make sure that the actuator is in the open position (factory-supplied position) before fixing the actuator to the valve body.

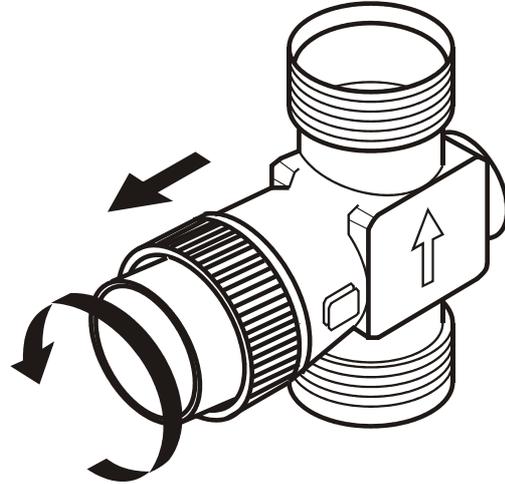


Fig. 3. Removing the protection cap

The actuator must be mounted by hand. Do not use tools or additional forces insofar as that could damage the actuator and valve.

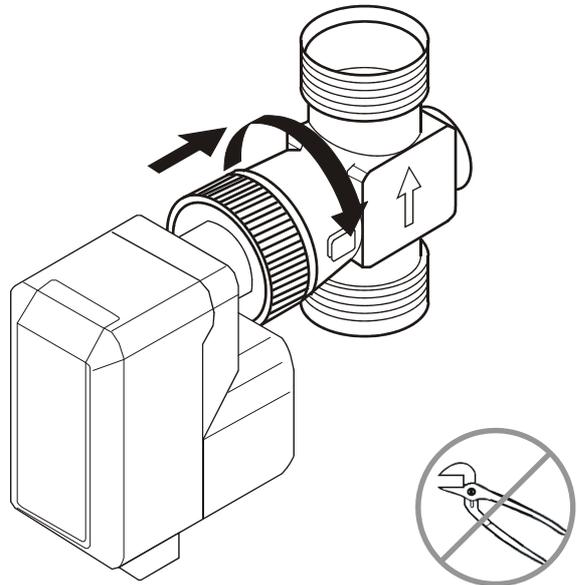


Fig. 4. Mounting the actuator

ELECTRIC WIRING

The electrical installation must comply with Fig. 5.

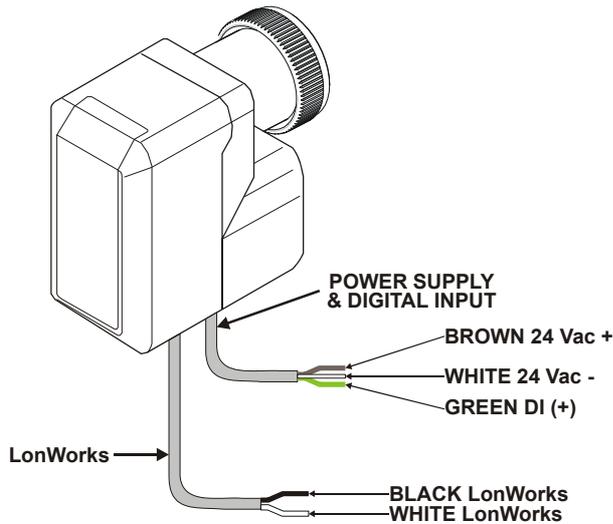


Fig. 5. Electrical wiring

Input voltage: Input voltage for power supply
24 Vac ± 20%, 50 / 60 Hz

LONWORKS: Connection of LONWORKS Bus FTT-10A, which is insensitive to polarity, eliminating wiring errors during installation.

Connection cable: 1.5 m

DIGITAL INPUT

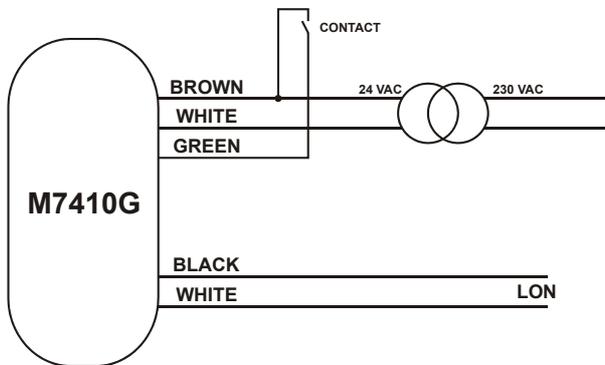


Fig. 6. Digital input

COMMISSIONING ADVICE

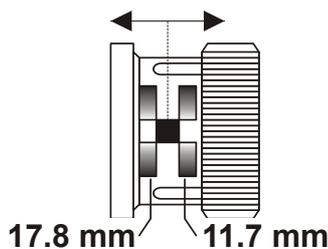


Fig. 7. Movement of the actuator stem

A functional check of the valve actuator can be carried out by changing nviManActPos (SNVT_lev_percent). The movement of the actuator stem (see Fig. 7) indicates whether the valve is opening or closing. If the direction of travel is incorrect, it

can be changed using the configuration parameter nciDirRev (SNVT state).

LEDS AND SERVICE PIN

Service LED: Defined by Echelon firmware in neuron chip (see Table 1).

Status LED: Blinks if wink was sent and indicates reverse or direct-acting (see Table 2 and diagram 1).

Service pin: Accessible under cover; used to send neuron ID over network during installation.

node state of service LED	hF01F status code	service LED	pulse rate (Hz)
applicationless and unconfigured	3	ON	76
unconfigured (but with an application)	2	flashing	0.51
configured, hard offline	6	OFF	--
configured	4	OFF	--

Table 1. Node states of service LED

status LED	blink modes
Mode 1	1s ON, 1s OFF, for 10 times - if a wink message was received
Mode 2	4s ON, 1s OFF - direct-acting and normal operation
Mode 3	4s OFF, 1s ON - reverse-acting and normal operation
Mode 4	continuously OFF - the device is in the offline mode

Table 2. Blink modes of status LED

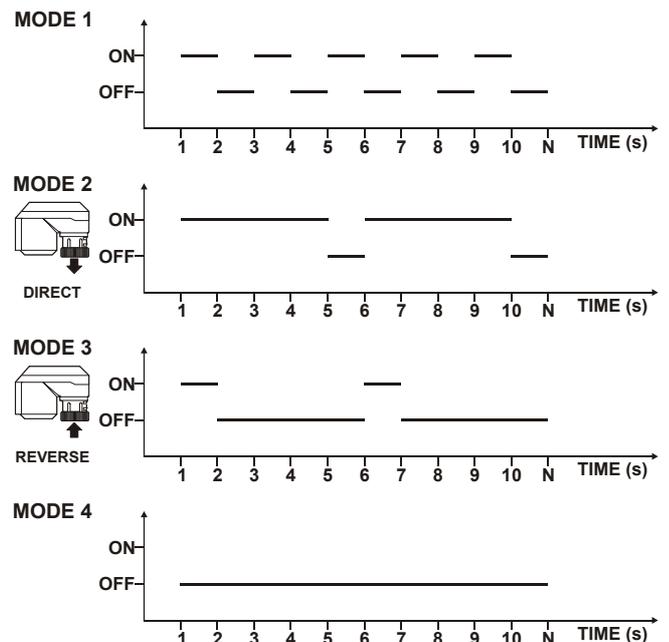


Diagram 1. Blink modes of status LED

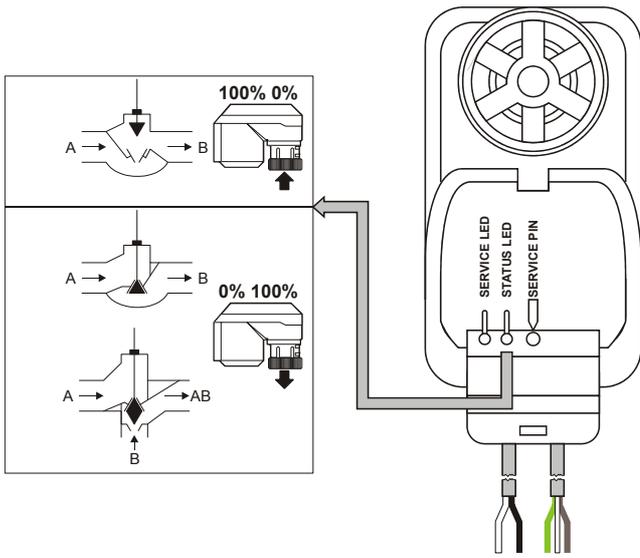


Fig. 8. Selecting valve type and output signal

DIMENSIONS

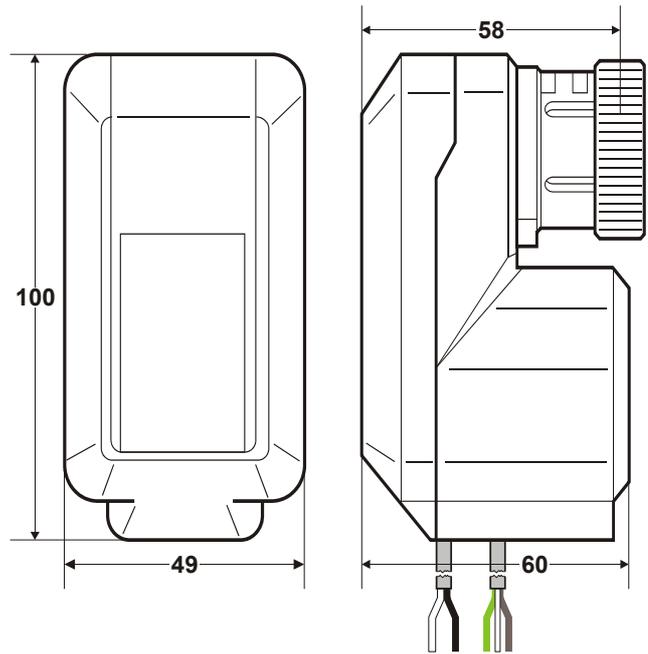


Fig. 9. Housing dimensions (mm)

LONMARK NETWORK INTERFACE

The LonMark network interface is as follows:

ACTUATOR OBJECT

The actuator object supports the following network variables used for communication and configuration.

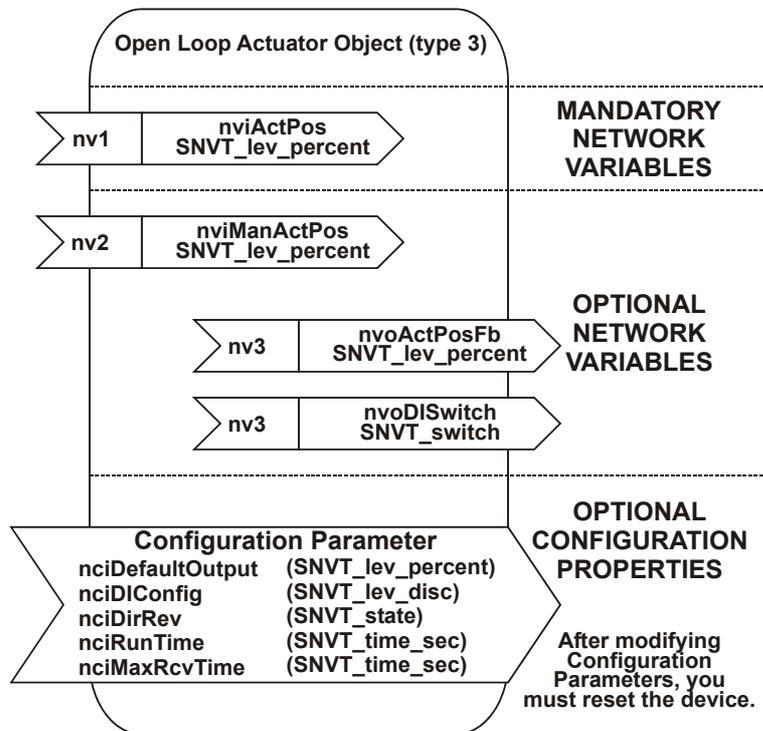


Fig. 10. Actuator object

DESCRIPTION OF USED SNVTS* AND SCPTS**

This table shows all used standard network variables and standard configuration parameters, their default values, a short description, the range and the send conditions and service of the outputs.

standard network variable	type {range} {factory settings}	adjustment of the different functionalities and the explanation of the shown values	
mandatory NVs		definition	explanation
nviActPos	SNVT_lev_percent {0...100% ; 163.835} {163.835} = INVALID	<p>nviActPos = 163.835 [INVALID] ⇒ After power-on or reset. ⇒ Controller is sending [INVALID]. The actuator will run to the safety position defined in [nciDefaultOutput]. ⇒ Watchdog has "detected"; Only possible if the watchdog was selected in [nciMaxRcvTime] and will correspond on the made selection in [nciDefaultOutput]. The actuator will run to the safety position defined in [nciDefaultOutput].</p> <p>nviActPos = 0% oder 100% ⇒ Synchronization with full running time + 30%. The synchronization can be interrupted if new values are received. (excluding during synchronization after Power-on or Reset)</p> <p>0% < nviActPos < 100% ⇒ The actuator runs to the position received by the controller. (Exceptional case is after power-on or reset)</p>	<p>The actuating signal received from a controller defined in the range of 0-100% which defines the stroke position of the connected valve.</p> <p>Received values below 0% are calculated like 0%, and values over 100% will be calculated with 100%. The only exception is the value 163.835 = [INVALID]. If this value is received, the actuator drives to the safety position defined in the [nciDefaultOutput].</p> <p>The received values will be never overwritten by the software of the actuator.</p> <p>The variable [nviActPos] is used only if the variable with higher priority [nviManActPos] for manual operation is set to [INVALID] = 163.835.</p> <p>The cyclic received actuating signal can be supervised. In this case, the maximum timeframe for the cyclic received values can be defined in the configuration parameter [nciMaxRcvTime]. If this timeframe elapses, the actuator will run to the safety position defined in the configuration parameter [nciDefaultOutput].</p>
optional NVs		definition	explanation
nvoActPosFb	SNVT_lev_percent {0...100% ; 163.835} {163.835} = INVALID	<p>nvoActPosFb = 163.835 (INVALID) ⇒ After power-on or reset. ⇒ No defined stroke position feedback possible.</p> <p>0% <= nvoActPosFb <= 100% ⇒ The actual calculated position of the stem according to the "Time to Stroke Model."</p>	<p>This value shows the actual calculated stem position.</p> <p>For old version ILAS_V1 (stored in sd_string of device) nvoActPosFb will be updated cyclic every 0.5 sec, if it changes or not. The timing is hard coded and is not adjustable. So be careful about making bindings of many actuator feedback variables, e.g., to a controller for trending charts. If you have too many output variables bound to one device, it could be overloaded. If you need this requirement, then make a download of the new controller software revision ILAS_V2, which has a behavior as described below. To get the actual revision, contact our Technical Assistance Center +49-7031-637-760.</p>

* SNVTS = Standard Network Variable Types

** SCPTS = Standard Configuration Parameter Types

optional NVs	type {range} {factory settings}	definition	explanation
nvoActPosFb	SNVT_lev_percent {0...100% ; 163.835} {163.835} = INVALID	nvoActPosFb = 163.835 (INVALID) ⇒ After power-on or reset. ⇒ No defined stroke position feedback possible. 0% <= nvoActPosFb <= 100% ⇒ The actual calculated position of the stem according to the time to stroke model. IMPORTANT: <i>If control signal requires 0 and 100%, then nvoActPosFb turns immediately to 0 and 100% respectively.</i>	For version ILAS_V2 or higher (revision stored in sd_string of device) nvoActPosFb will be measured internally every 5 sec. If the value changes at the latest after 5 seconds the value will be updated. If the value does not change after 60 sec, the value will be sent once.
nviManActPos	SNVT_lev_percent {0...100% ; 163.835} {163.835} = INVALID	nviManActPos = 163.835 (INVALID) ⇒ After power-on or reset. ⇒ Manual operation is switched off nviManActPos = 0% or 100% ⇒ Synchronization with full running time + 30%. The synchronization can be interrupted if new values are received. (excluding during synchronization after power-on or reset). 0% < nviManActPos < 100% ⇒ The actuator is running to the manual set value. (Exceptional case is after power-on or reset)	The actuator can be operated manually. To have max. accuracy, a synchronization to the completely retract position has to be done. The watchdog [nciMaxRcvTime] is operating in the background (if selected). The manual operation always has a higher priority than the received actuating signal [nviActPos]. After changing the value for manual operation [nviManActPos] to [INVALID], the actuator runs according to the received values of [nviActPos]. Received values below 0% are calculated like 0%, and values over 100% will be calculated with 100%. The only exception is the value 163.835 = [INVALID]. If this value is received, the actuator drives to the safety position defined in [nciDefaultOutput]. The received values are never overwritten by the software of the actuator.
nvoDISwitch	SNVT_switch Possible values 1. {0.0 , 0} 2. {100.0 , 1} 3. {x, 0xFF=255=-1}	The possible conditions can be selected by the configuration parameter [nciDIConfig]. A detailed description is made in section "Selection of Digital Input Usage".	Actual state of the sensor, connected to the digital input (e. g. window contact or dewpoint sensor). For old version ILAS_V1 (stored in sd_string of device) nvoDISwitch will be updated cyclic every 3 sec if it changes or not. The timing is hard coded and is not adjustable. So be careful about making bindings of many digital input variables, e.g., to a controller for trending charts. If you have too many output variables bound to one device it could be overloaded. If you need this requirement, then make a download of the new controller software revision ILAS_V2, which has a behavior as described below. To get the actual revision, contact our Technical Assistance Center +49-7031-637-760. For version ILAS_V2 or higher (revision stored in sd_string of device) nvoDISwitch will be measured internally every 5 sec. If the value changes at the latest after 5 sec, the value will be updated. If the value doesn't changes after 60 sec, the value will be sent once.

standard configuration parameters	SCPT Master List - Names from Echelon	type {range} {factory settings}	adjustment of the different functionalities and the explanation of the shown values	
			definition	explanation
nciDirRev	SCPTdirection	SNVT_state {Bits = 1 or 0} {1111111111111111}		Inverse the direction of action 1111111111111111= Direct 0000000000000000 = Reverse
nciMaxRcvTime	SCPTmaxRcvTime	SNVT_time_sec {0..6553 sec} {0} Only integer values are accepted and numbers after a comma will be ignored.	If no value [nviActPos] is received in a certain timeframe [nciMaxRcvTime], the actuator will run to the position defined in [nciDefaultOutput]. This is called a heartbeat control or watchdog function.	Watchdog for the Controller / Actuator supervision [nciMaxRcvTime] = 0 Watchdog is deactivated [nciMaxRcvTime] = for example 60 [sec] Watchdog expires if, for 60 seconds, no new value is received on [nviActPos]. The actuator will run to the position defined in the configuration parameter [nciDefaultOutput].
nciDefaultOutput	SCPTdefOutput	SNVT_lev_percent {0; 100% ; 163.835} {163.835} = INVALID	This configuration parameter defines the condition which will occur if the timeframe [nciMaxRcvTime] of the watchdog is passed or if an undefined situation takes place. For example: The controller failed and no values are received. In this case, the actuator runs to a safety position or stops immediately. The selection should be done according to the applications requirements.	Safety position in case of controller failure 100% = Actuator will perform a synchronization to 100%, 100% running time +30% safety. 0% = Actuator will do an synchronization to 0%, 100% running time +30% safety. [INVALID] = 163.835 = Actuator stops immediately All other values are the same as 163.835
nciDIconfig	SCPTinvtOut	SNVT_lev_disc {ST_ON} {ST_OFF}	See section "Selection of Digital Input Usage".	Configuration of the digital input
nciRunTime	SCPTDriveTime	SNVT_time_sec {0..6553.5 sec} {6553.5} = INVALID	The selection of the running time will be done automatically. This parameter is used to manually adapt the valve stroke to the running time and to secure the accuracy for the "Time to Stroke Model."	Possibility of overwriting the value for the running time, which is normally done automatically. This should be done only when adapting a different valve to the actuator. Setting nciRunTime to (INVALID) and resetting the node, the selection of runtime will be as factory setting. The running time is automatically selected and depending on the power supply frequency [50Hz/60Hz] which is measured by the hard-/software environment.

SELECTION OF DIGITAL INPUT USAGE

configuration parameter (SCPT...nciDIconfig) type: SNVT_lev_disc		network variable (SNVT...nvoDIswitch) Type: SNVT_switch		meaning	
		value	state	user-defined	DI not used or device offline or first 3 seconds after power-on/reset/online
default:  nciDIconfig = ST_OFF	switch closed	100.0	1	X	
	switch opened	0	0	x	
 nciDIconfig = ST_ON	switch opened	100.0	1	X	
	switch closed	0	0	X	
nciDIconfig = ST_NUL (0xFF)		0	0xFF (=255=-1)		x

WATCHDOG

Activation of Watchdog Timer

If SCPT [nciMaxRcvTime] is set to 0, the watchdog is generally switched OFF. To activate the watchdog, a value >0 must be selected. This value must be in the range of values. Values after a comma will be ignored.

Start of Watchdog Timer after Power-On

The watchdog timer starts after a first value is received by [nviActPos]. Up to that point, the actuator will remain in the defined safety position [nciDefaultOutput].

Watchdog Timer (in case of manual operation)

If the actuator is in the manual operation mode (nviManActPos ≠ INVALID), the watchdog timer will work in the background. This means that if the controller fails, the watchdog timer will expire and – after switching manual operation [nviManActPos] to [INVALID] – the actuator will run to the safety position defined in [nciDefaultOutput].

FACTORY SETTINGS

State of the Network and Configuration Parameters:

nviActPos = 163.835 (INVALID)
 nviManActPos = 163.835 (INVALID)
 nviActPosFb = 163.835 (INVALID)
 nvoDIswitch = [0.0 -1]
 after initialization (3 sec.) = [0.0 0]
 (if there is no switch connected)
 nciDefaultOutput = 163.835 (INVALID)
 nciDirRev = 1111111111111111
 nciMaxRcvTime = 0.0 sec
 nciDIconfig = ST_OFF
 nciRunTime = 6553.5 (INVALID)

BEHAVIOR AFTER POWER-ON / RESET / OFFLINE-ONLINE

The behavior of the actuator is dependent on the configuration parameter *nciDefaultOutput*.

There are three possible states.

nciDefaultOutput	behavior of the motor after power-on / reset
default: 163.835 = INVALID	The actuator makes no movement and waits. The first received value from the controller or manual will be saved as the actual position of the motor – no movement. The second received value will be compared to the first, and the motor runs to the new required position (and so on...).
0%	The actuator synchronizes to the position referring to 0% and runs then to the position according to the controller/ manual value, if one is received. If not, the actuator waits.
100%	The actuator synchronizes to the position referring to 100% and runs then to the position according to the controller/ manual value, if one is received. If not, the actuator waits.

INTERRUPTION OF SYNCHRONIZATION

After power-on / reset (nciDefaultOutput = 0 or 100%), it is no longer possible to interrupt synchronization. Subsequent synchronizations can be interrupted at any time.

OFFLINE-ONLINE MODE CHANGES

If the actuator is taken offline by a network management tool, the application program of the device stops, and the following actions will be performed before the offline mode takes place:

Online-Offline Change

- If it is running, the motor stops.
- The Status LED is turned OFF.
- The network variable *nviActPosFb* will be set to INVALID (163.835), thus showing that the actuator is in an undefined situation.
- The *state-value* of the network variable *nviDIswitch* will be set to INVALID (255 = 0xFF = -1), thus showing that the actuator is in an undefined situation.

Offline-Online Change

- Application restart. Same situation as power-on or reset.

LNS PLUG-IN ACTUATOR OBJECT DIAGNOSTIC AND TEST

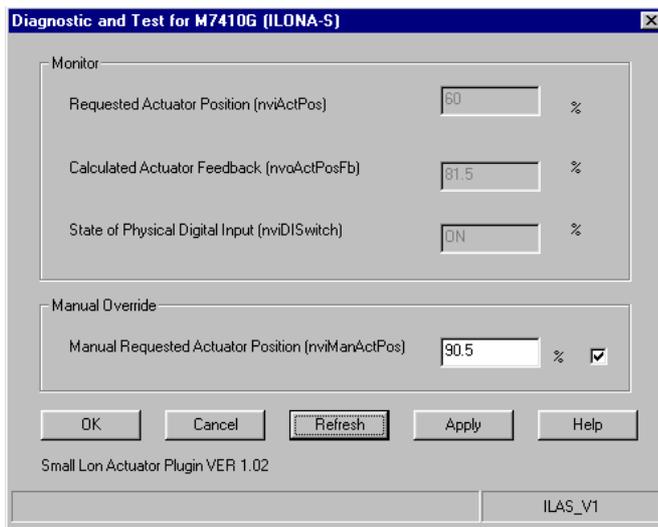


Fig. 11. Diagnostic and Test Screen

MONITOR

Shows the current status of the actuator and of the physical digital input.

REQUESTED ACTUATOR POSITION (nviActPos)

Monitoring of the requested actuator position of the controller. The range of nviActPos is 0...100%. Received values below 0% are calculated like 0%, and values above 100% will be calculated like 100%. The only exception is the value 163.835% = [INVALID]. If this value is received, the actuator drives to the safety position set in the Configuration dialog box.

100% means synchronization to the 100% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization caused by nciDefaultOutput cannot be interrupted.

0% means synchronization to the 0% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization caused by nciDefaultOutput cannot be interrupted.

Calculated Actuator Feedback (nvoActPosFb)

Monitoring of the actual calculated actuator position. It is important to know that the internal synchronous motor has no physical feedback sensor. The shown feedback is only a calculated value and should be used only for trend diagrams or to check motor movements. The correctness of this value is not guaranteed. The range of nviActPosFb is 0...100%. (The invalid-string signalizes an undefined situation). For send timing description, see section "Description of Used SNVTs* and SCPTs**".

State of Physical Digital Input (nvoDIswitch)

Monitoring of the actual state of the sensor connected to the physical digital input. (e.g., window contact or dewpoint sensor). The possible conditions can be selected by the [Digital Input – Mode] – field on the Configuration - dialog

box. The states of nvoDIswitch can be ON / OFF / INVALID. For send timing description, see section "Description of Used SNVTs* and SCPTs**".

MANUAL OVERRIDE

Allows manual operation of the actuator.

Manual Requested Actuator Position (nviManActPos)

To operate the actuator manually, click check box and enter desired value:

The manual operation always has a higher priority than the received controller signal [nviActPos]. The range of nviManActPos is 0...100%. Received values below 0% are calculated like 0%, and values above 100% will be calculated like 100%.

100% means synchronization to the 100% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization caused by nciDefaultOutput cannot be interrupted.

0% means synchronization to the 0% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization caused by nciDefaultOutput cannot be interrupted.

To have the greatest accuracy with the manual override, a synchronization to the stem completely retract position must be performed.

After switching off the manual override, the actuator runs according to the received controller values (nviActPos).

CONFIGURATION SCREEN ACTUATOR SETTINGS

Configures the functionality of the actuator and the physical digital input.

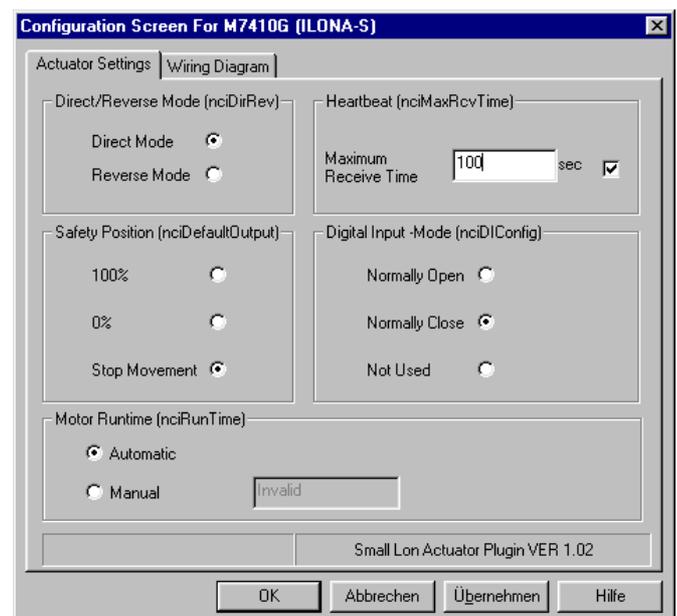


Fig. 12. Configuration screen

Direct / Reverse – Mode (nciDirRev)

Inverses the direction of action

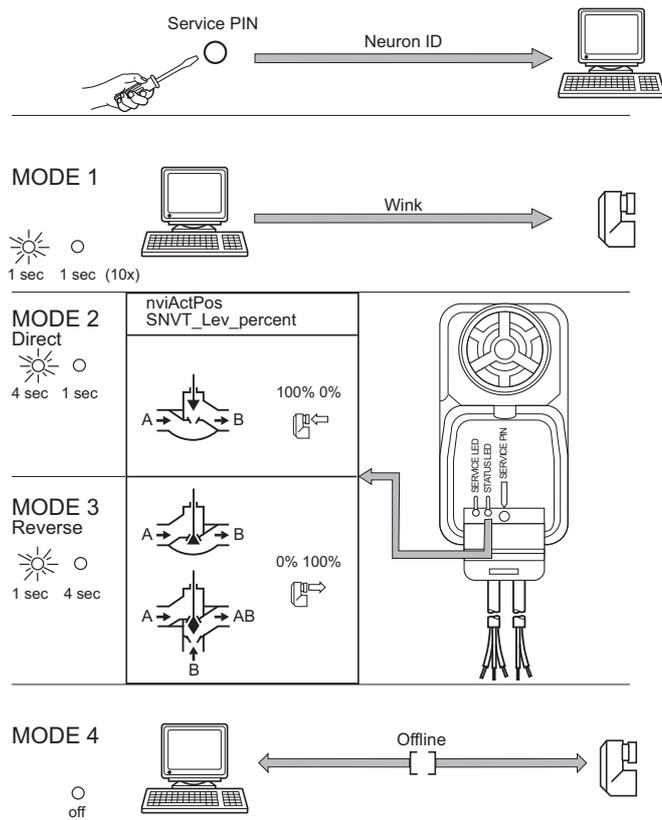


Fig. 13. Modes

DIRECT_MODE

Requested actuator position = 0%. Actuator runs to position “stem totally extract”.

Requested actuator position = 100%. Actuator runs to position “stem totally retract”.

Status LED blinking: 4s on / 1 s off (Mode 2).

REVERSE_MODE

Requested actuator position = 0%. Actuator runs to position stem totally retract.

Requested actuator position = 100%. Actuator runs to position stem totally extract.

Status LED blinking: 1s on / 4 s off (Mode 3).

Heartbeat (nciMaxRcvTime)

Heartbeat of the connected controller.

MAXIMUM RECEIVE TIME

If no requested actuator position value (nviActPos) is received in a certain timeframe defined in the [Heartbeat] - field, the actuator will run to the position defined in the [Safety Position] - field.

MAXIMUM RECEIVE TIME = 0 seconds. Heartbeat supervision = OFF

0 < MAXIMUM RECEIVE TIME <= 6553 seconds. Heartbeat supervision = ON and timeframe adjusted.

Additional Information

Only integer values are accepted, and numbers after a comma will be ignored.

Start of the heartbeat supervision after power on / reset / offline-online:

The heartbeat supervision starts after a first value is received by the controller (nviActPos). Up to that point, the actuator will stay in the defined safety position (nciDefaultOutput).

Heartbeat supervision in case of manual operation.

When the actuator is working in the manual operation mode ([nviManActPos] active), the heartbeat supervision is working in the background. This means, if the controller fails, the timeframe is exceeded. The manual operation is then switched off, and the actuator runs to the position defined by the [Safety Position] - field.

Safety Position

Safety position of the actuator in case of controller failure, power on / reset / offline-(nciDefaultOutput) online or any other undefined situation.

Defines the condition which will occur if the timeframe defined in the [Heartbeat] - field is exceeded or if an undefined situation like power on / reset / offline-online occurs.

100%: The actuator will perform a synchronization to the 100% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization cannot be interrupted.

0%: The actuator will perform a synchronization to the 0% - position with 130% running of full motor runtime. The synchronization can be interrupted.

Special Case: After power on / reset / offline-online, the synchronization cannot be interrupted.

STOP_MOVEMENT

Actuator stops immediately.

Special Case: Power on / reset / offline-online.

The actuator makes no movement and waits. The first received value for the requested position from the controller or manual override will be saved as the actual position of the motor – no movement. The second received value will be compared to the first, and the motor runs to the new required position (and so on...).

Digital Input - Mode(nciDIswitch)

Configuration of the digital input.

Digital Input – Mode (nciDIswitch) [Configuration-dialog box]		State of Digital Input (nvoDIswitch) [Diagnostic and Test – dialog box]
NORMALLY OPEN	switch closed	ON
	switch opened	OFF
NORMALLY CLOSED	switch opened	ON
	switch closed	OFF
NOT USED	switch ignored	INVALID*

* The invalid-string is shown the first three seconds after power on / reset / online - offline until the initialization of the actuator is finished, too).

Motor Runtime

Possibility of overwriting the automatically detected motor runtime and to secure the (nciRunTime) accuracy for the "Time to Stroke Model." This should be done only when adapting a different valve to the actuator.

AUTOMATIC

After power on / reset / offline online, the actuator automatically detects the motor runtime and software adapts the motor runtime to the 50 / 60 Hz mains frequency.

MANUAL

If the manual mode is activated, it is possible to adjust another motor runtime (the values 0 and 6553,5 are not allowed).

General Information

After power-on / reset / offline-online, the actuator automatically sends a service pin message. If the actuator receives a wink message (executed by the network management tool), the status LED will blink 10 times with a frequency of one second; the actuator is now in the field.

ONLINE-OFFLINE change executed by the network management tool:

- If it is running, the motor stops.
- The status LED is turned OFF.
- The calculated actuator feedback (nvoActPosFb) will be set to INVALID, thus showing that the actuator is in an undefined situation.
- The state of the physical digital input will be set to INVALID.

OFFLINE-ONLINE change executed by the network management tool:

Application restart. Same situation as power-on / reset.

Wiring Diagram

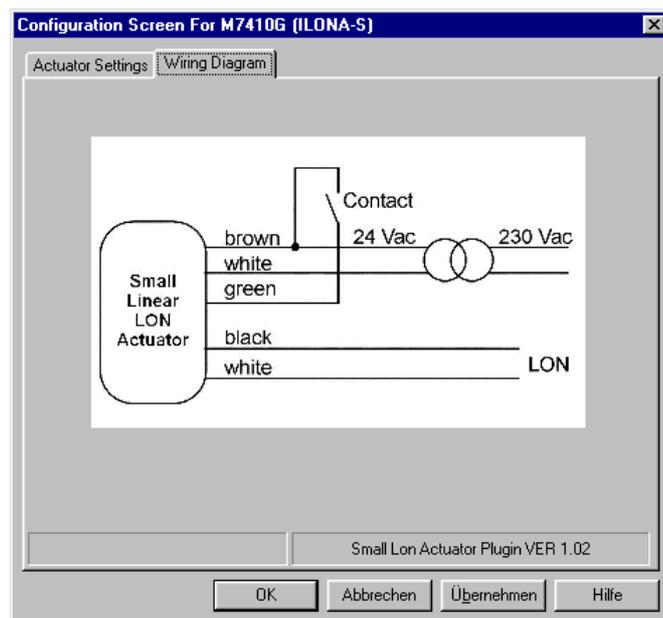


Fig. 14. Wiring

See also section "Electric Wiring" on page 2.

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