Electricvalve and Servomotors

USER MANUAL

Translation of the original instructions

Version: **1.0**

Date: **28/06/2022**

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VERSION	DATE	CHANGES
1.0	28/06/2022	-

Any information inside this manual can be changed without advice.

This handbook can be download freely from the website:
www.eelectron.com

Exclusion of liability:
Despite checking that the contents of this document match the hardware and software, deviations cannot be completely excluded. We therefore cannot accept any liability for this.
Any necessary corrections will be incorporated into newer versions of this manual.

Symbol for relevant information 

Symbol for warning 

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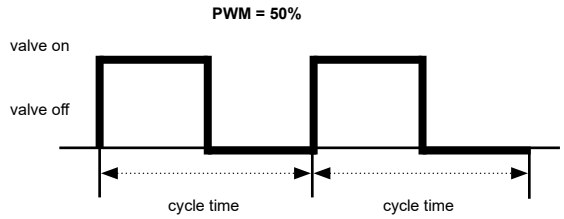
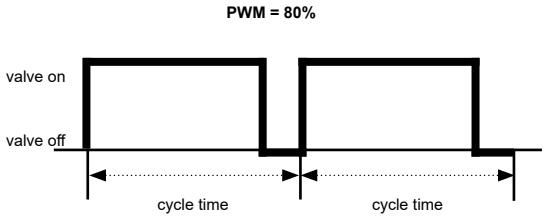
1. Electric valve – general parameters

Communication objects involved:

“<Output Axx | xx> Open/close”	1 Bit	CW
“<Output Axx | xx> PWM %”	1 Byte	CW
“<Output Axx | xx> Status”	1 Bit	CRT
“<Output Axx | xx> PWM Status %”	1 Byte	CRT

The single-relay configuration allows to manage also ON / OFF solenoid valves for heating / cooling systems. The open or closed relay condition must be correctly associated with the open or closed valve condition as some valves, when energized, are open while others are closed.
The control of this type of valves can be ON / OFF through the 1 bit object <Output Axx | xx> Open / Close or PWM type. The PWM control is used to avoid the temperature hysteresis typical of the ON / OFF control. The relay operates the valve with the ON / OFF commands but performs a proportional control (0% ÷ 100%) based on the value received on the object <Output Axx | xx> PWM% modulating the pulse widths ON and OFF over time.





KNX PARAMETER	SETTINGS
Valve position when relay is close	open close
Defines the status of the valve when it’s energized or not.	
Telegram for valve open	Telegram 0 Telegram 1
Defines the 1 bit valve opening telegram value.	
Global all valve closed	not subordinate subordinate
With this parameter it is possible to subordinate the valve to the global object “<Global All> All Valve Closed” to be set in General Parameter in ETS. This object considers the status of the valves and sends the value 1 if at least one valve is open and the value 0 if all are closed. in this way it is possible to give consent to the pump that supplies the hydraulic circuit.	
Cycle base time for PWM [min]	5 .. 255
It defines the “cycle time” in which the actuator is activated at a time interval and then switched off again until the end of the cycle time.	
PWM lower limit value	0% ÷ 30%
Defines the minimum value received below which the valve is always closed.	
PWM upper limit value	70% ÷ 100%
Defines the maximum value received above which the valve is always open.	
Feedback state	disabled / enabled
Defines whether or not to send the status with a 1-bit object	
Telegram value for status sending	telegram 0 is open / telegram 1 is close
It defines the telegram value for status sending.	
Feedback PWM%	disabled / enabled
Defines whether or not to send the status with a 1-byte object	
Anti lock function	disabled / enabled
It is possible to enable an automatic valve switching function, useful in case of long periods of inactivity, for example during the summer season. If this function is activated, it’s possible to select how long the period of inactivity may last (refer to the “Anti-lock valve activation period” parameter); before the valve opens and after 5 minutes closes.	
Anti lock movement frequency	from 1 time per day up to 1 time every 16 days with granularity 1 day
Determines the maximum valve inactivity period before the anti-lock function is activated.	
Behaviour on power up	none valve close valve open
it defines the status of the valve after power up.	
Behaviour on power down	none valve close valve open
it defines the status of the valve after power down.	

2. Electric valve – lock function

Communication object involved:

“<Output Axx | xx> Lock”	1 Bit	CW

When the lock function is enabled, the relay allows the relay to be switched to a defined state by means of a bus telegram and forcing it to retain this status even if it receives bus commands on other switching objects.

When the lock function is active, local buttons are not working.

KNX PARAMETER	SETTINGS
Lock sources	Do not use lock object Enable local lock object Enable global lock object. Enable local and global lock object
This parameter refers to the management of global objects. **Do not use lock object** Lock function is not used **Enable local lock object** The block function is activated / deactivated only via the "<Output Ax x| xx> Lock" **Enable global lock object** The block function is only activated / deactivated via the object "<Global All> Lock" **Enable local and global lock object** The block function is activated / deactivated via the "<Output Axx | xx> Lock" or the "<Global All> Lock" object	

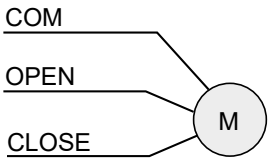
KNX PARAMETER	SETTINGS
Lock state after download	Locked / unlocked
Set the value of the block function after download	
Telegram for lock activation	Activate on OFF telegram Activate on OFF telegram
Defines which telegram is to lock and which one is to unlock.	
Automatic unlock after time (0 = never unlock automatically) [min]	0...120
Lock can be set as a timed function, the lock function is deactivated at the end of the blocking time. If the lock function is set with automatic deactivation, the time-out time is reloaded each time a new lock activation telegram is received.	
Action on lock	none valve close valve open
This parameter selects the state that the valve must assume when the "lock" function is activated.	
Action on unlock	none valve close valve open last value received last value before lock
This parameter selects the state that the valve must assume when the "lock" function is disabled.	

3. Servomotors – general parameters

Communication objects involved:

"<Output Bx | xx> Open/close"	1 Bit	CW
"<Output Bx | xx> Position %"	1 Byte	CW
"<Output Bx | xx> Position 1"	1 Bit	CW
"<Output Bx | xx> Position 2"	1 Bit	CW
"<Output Bx | xx> Position 3"	1 Bit	CW
"<Output Bx | xx> Lock"	1 Bit	CW
"<Output Bx | xx> Status"	1 Bit	CRT
"<Output Bx | xx> Position Status %"	1 Byte	CRT
"<Output Bx | xx> Opening Status"	1 Bit	CRT
"<Output Bx | xx> Closing Status"	1 Bit	CRT

The block includes the association of 2 relays for the management, in HVAC systems, of servomotors, 3-way valves or ventilation grilles.
The management of the 3-way valves is carried out using the coupled relays, in each pair of relays one executes the OPENING action and the other the CLOSING.



The parameters allow to set:
- The total opening / closing time
- The opening extra-time
- The closing extra-time
- The minimum pause time between 2 movements
- The frequency of the anti-locking function
- The status sent on the bus

Through these 1 bit communication objects it is possible to set the position of the valve or of the servomotor.

KNX PARAMETER	SETTINGS
Contact type	normally open normally close
Defines the status of the valve when it's energized or not.	
Global all valve closed	not subordinate subordinate
With this parameter it is possible to subordinate the servomotor to the global object "<Global All> All Valve Closed" to be set in General Parameter in ETS. This object considers the status of the valves and sends the value 1 if at least one valve is open and the value 0 if all are closed. in this way it is possible to give consent to the pump that supplies the hydraulic circuit.	
Total revolution time [s]	0..3000
It defines the time it takes to go from closed to open.	
Extra time for motor opening [s]	1 ÷ 30
It defines the additional time that applies for the complete opening of the servomotor	
Extra time for motor closing [s]	1 ÷ 30
It defines the additional time that applies for the complete closing of the servomotor	
Stop time between 2 same motor movements	100..800 ms / 1, 1.5, 2, 2.5, 3, 4, 5 sec
It defines the pause time between 2 same motor movements.	
Stop time between 2 opposite motor movements	100..800 ms / 1, 1.5, 2, 2.5, 3, 4, 5 sec
It defines the pause time between 2 opposite motor movements.	
Telegram for open	telegram 0 / telegram 1
It defines the telegram sent on object "<Output Bx | xx> Open/close" to open.	
Position 1	0% ÷ 100% (default 30%)
With this parameter is possible to set the position of the valve or of the servomotor.	

Position 2	0% ÷ 100% (default 65%)
With this parameter is possible to set the position of the valve or of the servomotor.	
Position 3	0% ÷ 100% (default 100%)
With this parameter is possible to set the position of the valve or of the servomotor.	
Anti-lock Function	disabled / enabled
It is possible to enable an automatic valve switching function, useful in case of long periods of inactivity, for example during the summer season. If this function is activated, it's possible to select how long the period of inactivity may last (refer to the "Anti-lock valve activation period" parameter); before the valve opens and after 5 minutes closes..	
Anti-lock movement frequency	every day ÷ every 16 days
Determines the maximum valve inactivity period before the anti-lock function is activated.	
Behaviour on power up	stop - no movement close open
it defines the status of servomotor after power up.	
Lock sources	Do not use lock object Enable local lock object Enable global lock object. Enable local and global lock object
This parameter refers to the management of global objects. **Do not use lock object** Lock function is not used **Enable local lock object** The block function is activated / deactivated only via the "<Output Ax x| xx> Lock" **Enable global lock object** The block function is only activated / deactivated via the object the "<Global All> Lock object" **Enable local and global lock object** The block function is activated / deactivated via the "<Output Axx | xx> Lock" or the "<Global All> Lock "object	
Feedback state	disabled / enabled
If enabled, this parameter displays an additional communication object "<Output Bx | xx> Status"which determines the sending, by the actuator receiving the command, of a feedback telegram to check whether the requested operation has been carried out or not. The telegram transmits the state of the actuator.	
Telegram value for status sending	telegram 0 is open / telegram 1 is close
It defines the telegram value for status sending.	
Feedback position %	disabled / enabled
If enabled this parameter send through the object "<Output Bx | xx> Position Status %" the % value of the position of the valve.	
Feedback opening and closing	disabled / enabled
If enabled this parameter send through the objects "<Output Bx | xx> Opening Status" or the "<Output Bx | xx> Closing Status" the opening or closing statut of the valve.	

KNX PARAMETER	SETTINGS
Lock state after download	Locked / unlocked
Set the value of the block function after download	
Telegram for lock activation	Activate on OFF telegram Activate on OFF telegram
Defines which telegram is to lock and which one is to unlock.	

Automatic unlock after time (0 = never unlock automatically) [min]	0...120
Lock can be set as a timed function, the lock function is deactivated at the end of the blocking time. If the lock function is set with automatic deactivation, the time-out time is reloaded each time a new lock activation telegram is received.	
Action on lock	stop - no movement close open
This parameter selects the state that the servomotor must assume when the "lock" function is activated.	
Action on unlock	none close open last value received last value before lock
This parameter selects the state that the servomotor must assume when the "lock" function is disabled.	