

2016

KNX Switch Actuator Manual



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Co.,Ltd. 2015-12-17

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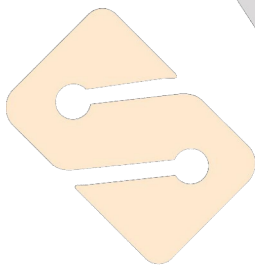
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Notice

1. Please carefully read this manual before using the product
2. This product is used in indoor environment and installed in electrical control box
3. Please install this product in a dry and ventilated place
4. Before power on, please confirm the input voltage according to the manual; after power on, please confirm the normal output voltage before connecting to the control bus
5. Please make sure the secure shell is in good condition, if the shell is damaged, please stop using to avoid accident
6. The power lead and ground lead must meet the requirement of Electrical Installation Standard
7. Only used indoor, model number need to be changed for outdoor use
8. This product is NOT a toy, please make sure it is out of childrens' touch
9. Only be suitable for EIB/KNX system bus
10. Others:

The below sign indicates this product can't be dealt as ordinary family rubbish,in order to avoid the possible environment and human health harm caused by the electrical waste, this product must follow recovery processing. Please contact the local recycling department after this product is scrapped, to make sure it can go as the right waste processing procedure.



I. Actuator category

1.1 SATION-SW10X Technical data

Power supply characteristics	KNX-Bus Voltage	21...31V DC
	Supply current	< 12mA
	Consumption	< 250mW
Nominal output characteristics	Current range	0.5A...22A
	Control way	1-Fold/4-fold/6-fold/8-fold/12-fold
	Rated Voltage	110~440V AC(50/60Hz)
	Rated Current	16A max
	Leakage Loss Per Load	1.5W
Output Switching Current	$\mu=0.45$	12A/230V AC
	$\mu=0.8$	16A/230V AC
	Capacitive Load	16A/250V AC 140uf
	Minimum cut-off	0.1A/12..24V AC
	DC cut-off resistance load	22A/220V AC
Lifetime	ON-OFF operation life	>3000000times
	Terminal electrical life:	
	$\mu=0.8/240V$	>100000times
	$\mu=0.45/240V$	>30000times
External Connections	KNX-TP1	Twin cable comply with KNX standard are required
	Load-end Terminal	Minimum 0.6Nm torque are required for terminating
Operating and display interface	Programming button and corresponding indicator	LED
	Status Indication of switch position	LED
Enclosure	IP20\concealed cooling channel	EN60529
Safety Class	II	EN61140
Insulated isolation	Over-voltage	EN60664-1 III
	Electric network pollution	EN60664-1 2
Safety voltage	SELV	24V DC
Temperature Range	Operation	-5°C...+45°C (3K5 series)
	Storage	-25°C...+55°C
	Transport	-30°C...+70°C
Environmental	Maximum Humidity	95%

requirement		
Mechanical Parameters	Size	90mm X 72 (144) mm X 63mm
	Weight	0.3/0.6kg
	Installation	On 35mm mounting rail (EN60715 EN50022)
Appearance	Grey-black、PVC Panel	Color code:PANTONE 5395C
Approvals	KNX EN50090-1\2	
CE Mark	EMC index can be referred to the Appendix	

1.2 Product Appearance:



2 Overview functions

This booklet provides all the details for the SATIION switch actuators products, including the installation and programming details And how to use switch actuators. For ease installation, the product of this series comply with EN60715 standard, installed on a 35mm railway,.

Switch actuators Use for control switch load, eg.

- Lighting
- Heating up control
- Signal equipment

Connect the KNX bus and other equipment to form the building electrical equipment control system. Apply the engineering debugging tool ETS, can easily complete the debugging of the entire system.

1.1 Product function

SATIION series' switch actuator, optional three kinds of specifications--4, 8, 12 ways, using KNX bus terminals to connect the network system, no additional power supply required, therefore can control the communication load.The distribution of the physical address and parameter setting can be done by using the engineering design tool software ETS (version ETS4) with the knxprod files, knxprod file to be installed in case of using ETS 4 software.

This switch actuator is implement for switching 4 to 12 ways independent electrical AC load or three-phase load. The maximum load current for output of each control point is 20 A, each circuit could be switch on or switch off manually.The switch status are externally visible.

The following functtions can be set by single way:

- Time control function: ON/OFF with adjustable latency time
- Warning function and time adjustable function for stairway illumination
- Scene and pre-set control: 8 or 1
- Logic operation: and/or/xor/gate function
- State value checking and response
- manually force operation and safely function
- current valve function setting
- relay switch location selection after disconnect and recovery of bus voltage
- real-time monitor of load current and overload proection alarm and cut off function

3. Device Technology

3.1 Device parameters

SATION switch actuator, the modular equipment are designed according to proM design requirements, is convenient to install on 35mm U-shape rails of the distribution box. Connected to the EIB/KNX system by the bus terminals. Actuators connect to the load, using a group of pressure type high voltage terminal blocks with two joints, and each output can be individually controlled. The equipment is suitable for switch resistance, inductance and capacitance type load.

Power supply- operating voltage 21...31 V DC , supply by bus wires

- EIB / KNX current consumption < 12 mA
- EIB / KNX power consumption Max. 360 mW

Output value

- Type SWI02-4CH、SWI03-8CH、SWI04-12CH、
- Output qty 4、 8、 12

Max rated voltage 440v AC (50~60Hz)

- Rated current 16A 16A
- Max loading consumption 2W 4W 6W

Output switch current

- 20A/230V Comply with AC1(EN60947-4-1)(resistance load) 20A/230V
- 16A/230V Comply with AC3(EN60947-4-1)(capactive load) 16A/230V
- Comply with EN60669 fluorescent light load 16A/250(140uF)

Switch performance (contact)

- Max current peak value I_p (150 μ s) 400A
- Max current peak value I_p (250 μ s) 320A
- Max current peak value I_p (600 μ s) 200A

Output lifetime

- mechanical endurance >1 million
- electrical endurance comply with IEC 60 947-4-1
- AC1 (noninductive or micro-inductive load, resistance furnace) >100000 times
- AC3 (starting up and disjunction in operation of cage induction motor) >10000 times
- AC5a (ON-OFF of discharge lighting) >10000 times

Output switching time

- operating period of simplex relay max 100ms
- latency time after switch ON max 30ms
- latency time after switch OFF max

50ms connection

- EIB / KNX bus connection terminals (diameter 0.8mm)

- load connection terminals 7.62mm
- terminal operation and indication
- button distribute physical address/ programming
- LED flashing indicates normal operation of the application layer
- contact point indicator
- Switch on: light on
- Switch off: light out

Enclosure

- IP 20; According to EN60529

Safety level

- II; According to EN61140

Temperature range

- Operating - 5 °C ... + 45 °C
- Storage - 25 °C ... + 55 °C
- Transportation - 30 °C ... + 70 °C

Environmental condition

- Humidity <93%, expect condensation
- Weight: no more than 1kg

Design

- DIN Module components for DIN rails, 35mm U-shape rail, modular installation
- Size(Length*Width*Height mm)
- SWI021-4CH:
- SWI03-8CH : 144 x 90 x 63
- SWI04-12CH : 215 x 90 x 63

Load design of light

- Standard incandescent light 3680
- W/CH Fluorescent light T5 / T8
- Uncompensated lighting 3680W/CH
- hunt compensated lighting 2500W/CH
- DUO circuit 3680W/CH

Low voltage halogen light

- Induction transformer 2000W/CH
- Electronic transformer 2000W/CH
- 230V Iodine-tungsten light 3680W/CH

Alkyd resin light

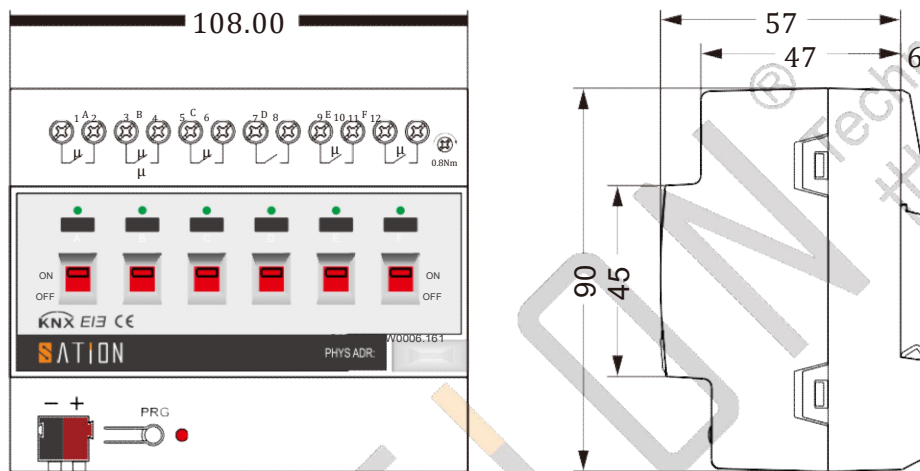
- Uncompensated 3000W/CH

- Shunt compensated
3680W/CH Mercury vapor light
- Uncompensated 3000W/CH
- Shunt compensated 3680W/CH

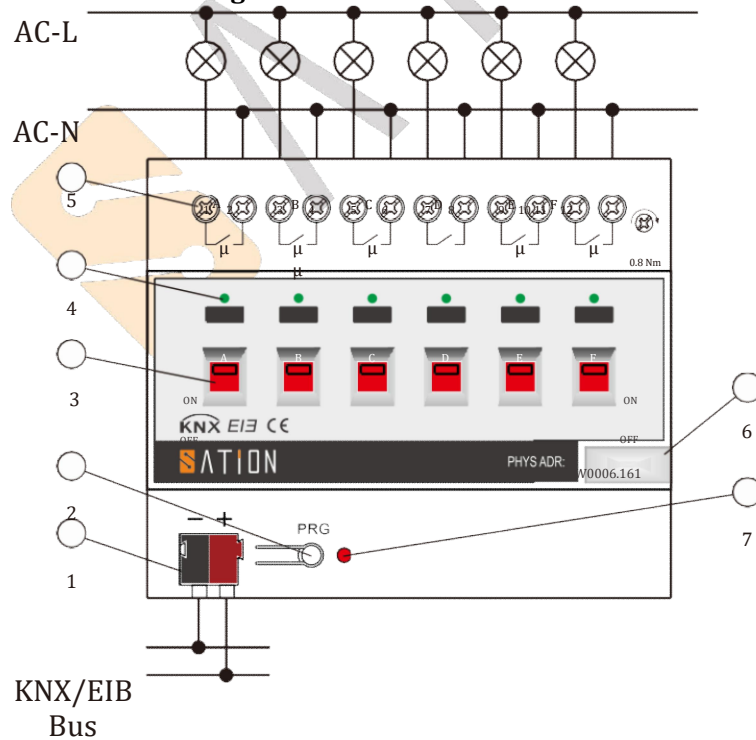
3.2 Dimension drawing and circuit Diagram

3.2.1 Switch actuator 6-fold 230VAC 16A

3.2.1.1 Dimension drawing (mm) :

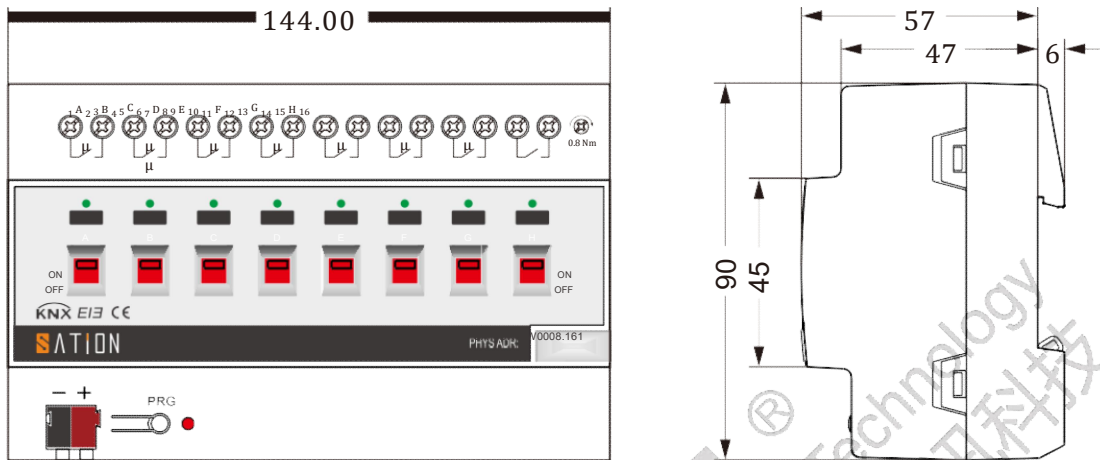


3.2.1.2 Circuit Diagram:

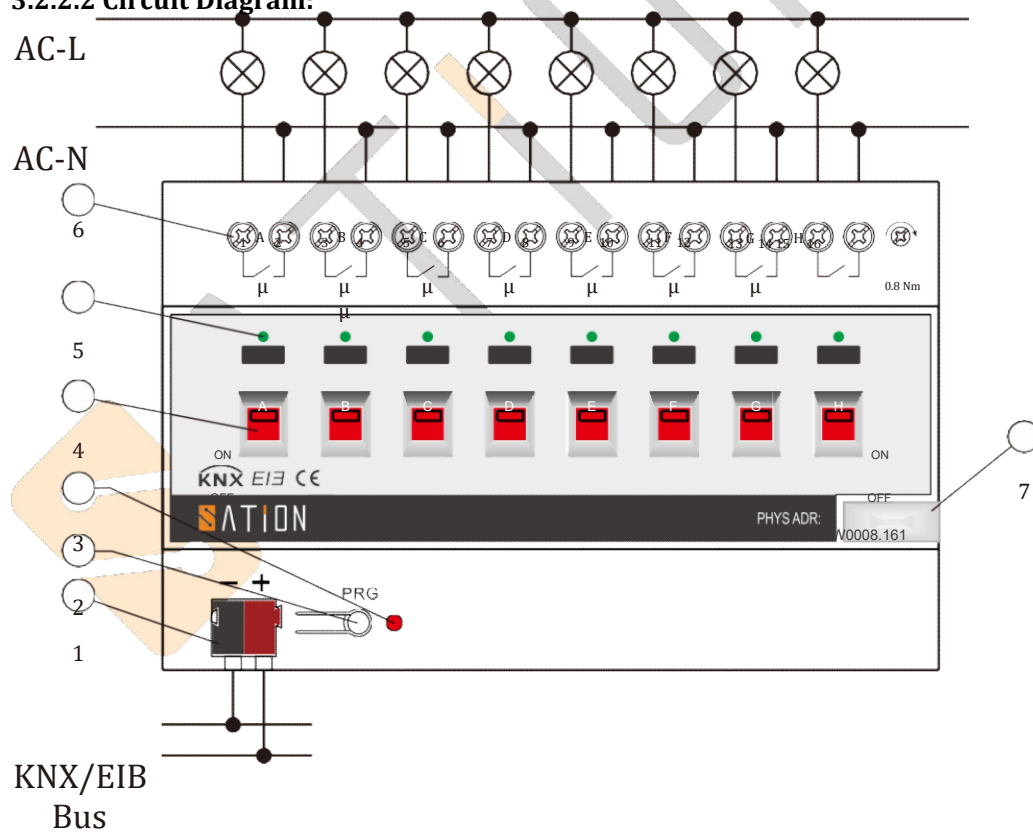


3.2.2 Switch actuator 8-fold 230VAC 16A

3.2.2.1 Dimension Diagram (mm) :

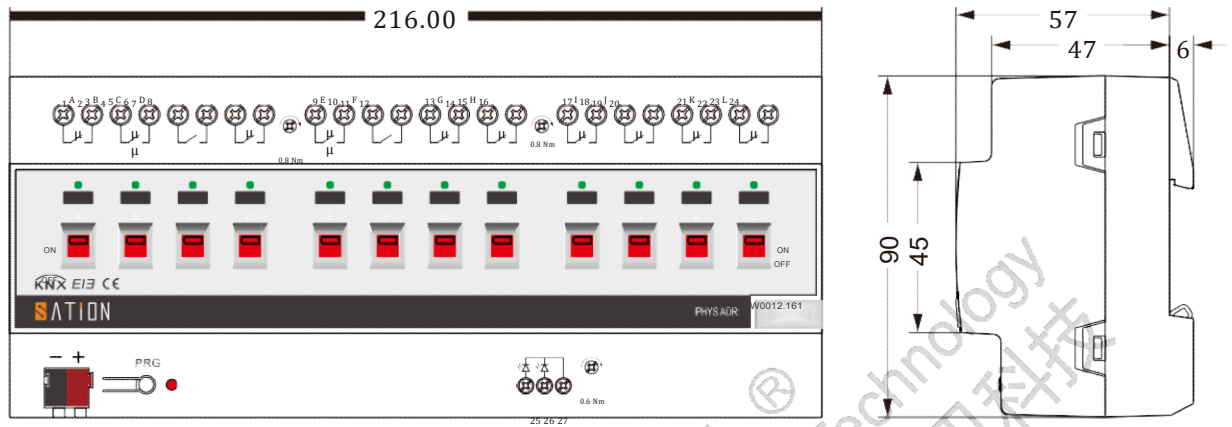


3.2.2.2 Circuit Diagram:

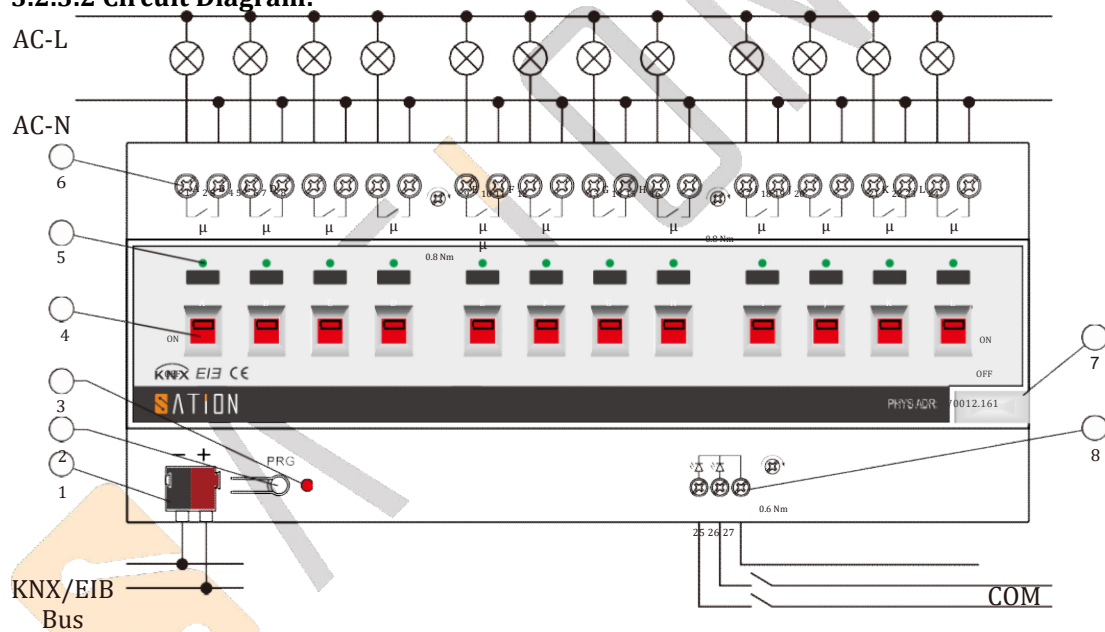


3.2.3 Switch actuator 8-fold 230VAC 16A

3.2.3.1 Dimension Diagram:



3.2.3.2 Circuit Diagram:



4 Contact Us

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5. Appendix

SWI01 Switch Actuators EMC (CE) Standard in the chart below.

Index Name	Standard No.	Grade Requirement	Performance Criteria	Remark																
ESD (EN61000-4-2)	EN61000-6-1	Contact 4KV/Air 8KV	B																	
RS (EN61000-4-3)		80MHz-2GHz: 3V/m 2G-2.7GHz: 1V/m	A																	
EFT (EN61000-4-4)		±1KV	B																	
SURGE (EN61000-4-5)		L-N ±1KV L-PE ±2KV	B																	
C/S (EN61000-4-6)		3V	A																	
M/F (EN61000-4-8)		3V/m	A																	
DIPS (EN61000-4-11)		<table border="1"> <tr><td>0</td><td>% residual voltage cycle</td></tr> <tr><td>0.5</td><td>% residual voltage cycle</td></tr> <tr><td>0</td><td>% residual voltage cycle</td></tr> <tr><td>1</td><td>% residual voltage cycle</td></tr> <tr><td>70</td><td>% residual voltage cycle</td></tr> <tr><td>25/30 at 50/60Hz</td><td>% residual voltage cycle</td></tr> <tr><td>0</td><td>% residual voltage cycle</td></tr> <tr><td>250/300 at 50/60Hz</td><td>% residual voltage cycle</td></tr> </table>	0	% residual voltage cycle	0.5	% residual voltage cycle	0	% residual voltage cycle	1	% residual voltage cycle	70	% residual voltage cycle	25/30 at 50/60Hz	% residual voltage cycle	0	% residual voltage cycle	250/300 at 50/60Hz	% residual voltage cycle	B & C	
0	% residual voltage cycle																			
0.5	% residual voltage cycle																			
0	% residual voltage cycle																			
1	% residual voltage cycle																			
70	% residual voltage cycle																			
25/30 at 50/60Hz	% residual voltage cycle																			
0	% residual voltage cycle																			
250/300 at 50/60Hz	% residual voltage cycle																			
Conducted Interference	EN61000-6-3	66dB(V) - 56 dB(V) QP 56dB(V) - 46 dB(V) AV		0.15MHz-0.5MHz																
		56 dB(V) QP 46 dB(V) AV		0.5MHz-5MHz																
		60dB(V) QP 50dB(V) AV		5MHz-30MHz																
Radiated Interface		40 dB(V/m) 47 dB(V/m)		30MHz-230MHz 230MHz-1000MHz																
	Harmonic Current	EN61000-3-2																		
Voltage Flicker	EN61000-3-3																			

Note 1: The grade requirement is according to the KNX Standard Volume

4-2 Note2: Criteria A: Equipment transmission and function is error-free;

Criteria B: Error is permitted

II SWI01 Switch Actuators Safety (CE) Standard in the chart below.

Items	No	Required level	Performance	Remarks
	EN60947-3			
Isolation strength test	√	2	--	
Inflaming retarding test	√	2	--	
Temperature rise test	√	2	A	
Corrosion resisting test	√	2	A	
Electrical life test	√	2	A	
On-off volume control test	√	2	A	
Normal operation test	√	2	A	