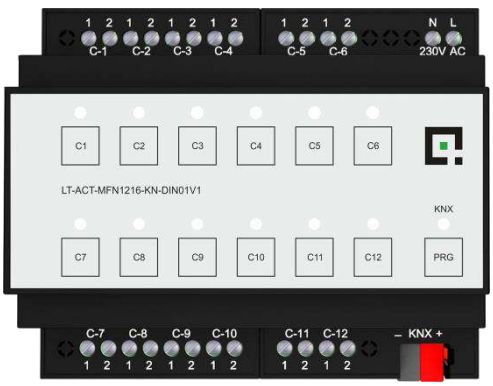
KNX

Multi-Function Switching Actuator



MainFeaturesoftheproduct:

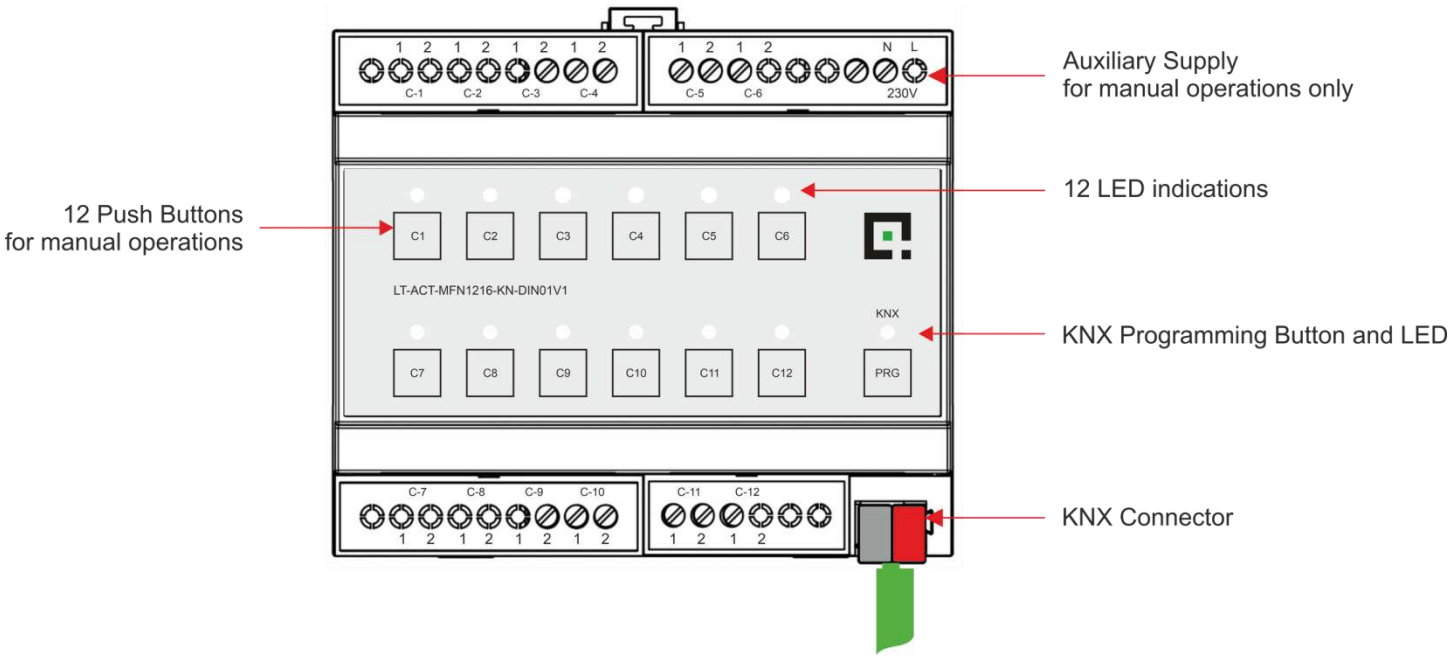
- Eachindividualchannelcanbeconfiguredasa switchingchannelor2adjacentchannelscanbe configuredas1curtaincontrolchannelorcanbe configured as combination of both
- EachrelaychannelisNormallyOpen
- ONdelayandOFFdelayforeachofthechannel
- Staircasefunctionwithdurationtimerforeachof theswitchingchannel
- TotalTravelTimeconfigurationforeachofthe CurtainChannel
- Support8Sceneforeachindividualchannelrelayor for each pair of channels (if configured for curtain operation),eachscenessupportexecutionofanyof the assigned KNX scenes (1-64)
- Manualoperationofthe12channelrelaysthrough on-boardpushbuttons
- 230Vauxiliarypowersupplytoenablemanual operationofrelays

Multi-functionactuatorcomesin twovariants;12Channelsand6Channels. 12Channelsvariantcanbeusedas12 independentswitchingchannelsor6curtain channelsorcombinationofboth.6Channels variantcanbeusedas6independentswitching channelsor3curtainchannelsorcombination ofboth.Pairingtwoindependentadjacent channelswillenable1curtainchannel. Acombinationofbothswitchingandcurtain canbeusedforseamlesscontroloflighting andcurtainsfromasingleactuator.Itsupports 8scenesperchannel.Profileofsequential actionscanalsobeactivatedforeachchannel bywhichausercandecidethespecifictimely actionstobeperformedbyeachchannel.

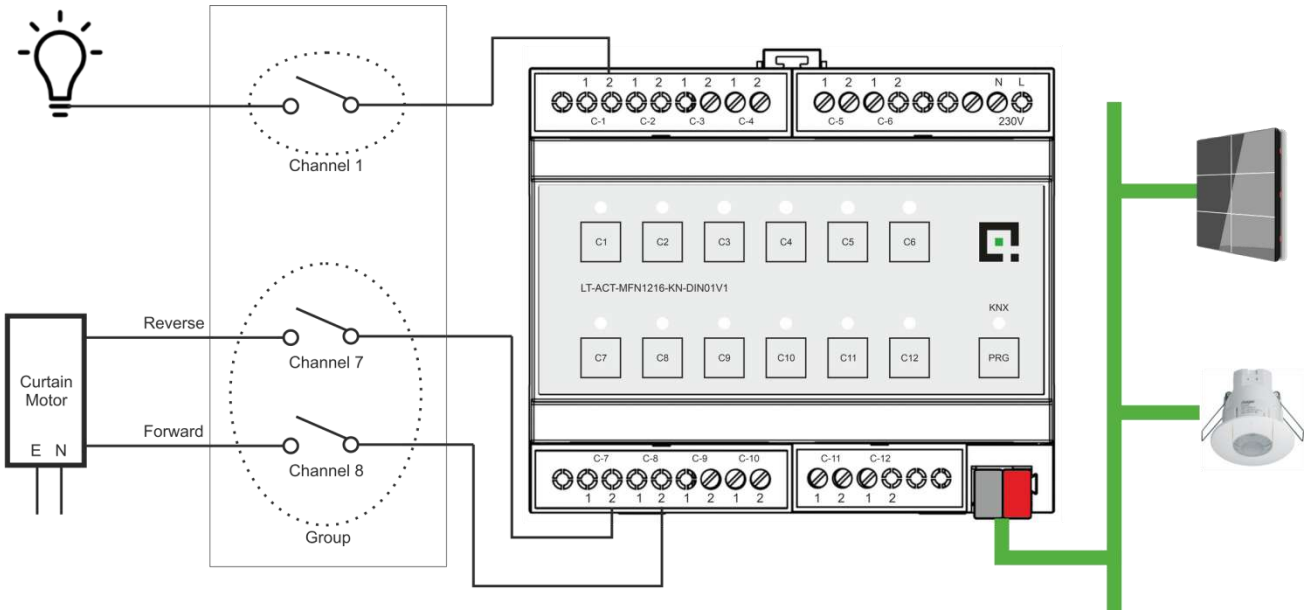
AreasofApplication

- Privateresidences
- Hotelrooms
- Hospitalrooms
- Officecabins
- Conferencerooms

TerminalDetails



ApplicationSchematic



TechnicalSpecifications

Parameter	Description
Number of Channels	12(for6Channelsvariant,Channel1toChannel6are active)
System Voltage	30VDCSELV,KNX
TypicalconsumptiononKNXbus	15mA
Standby consumption on KNX bus	7.5mA
Maximum permissible current per channel	16A
Maximum permissible current per device	80A
ConnectionType,Power	Screw Connection with tension sleeve
Cable Cross-Section	0.75-2.5mm²
ConnectionType,KNX	TypicalTP1busconnectorfor0.80mmØrigidcable
External power supply	230V AC
Max.Avg.OperatingCurrent:@230V	500mA
Operation temperature	-5°C ... +45°C
Storage temperature	-20°C ... +70°C
Degree of protection	IP20
Installation	DIN-rail
Housing material	ABS
Enclosure dimension (l x w x h)	106 x 90 x 58 mm

OrderReference:

StandardStockitems:

- KNXMulti-Functionactuator,12Channel,Configurableas12 independentoutputsof16Ampsor06channelofCurtaincontrol.DIN. Manualoverridewith230VACAuxiliarysupply.
  OrderRefNo.LT-ACT-MFN1216-KN-DIN01V1

- KNXMulti-Functionactuator,06Channel,Configurableas06 independentoutputsof16Ampsor03channelofCurtaincontrol,DIN. Manualoverridewith230VACAuxiliarysupply.
  OrderRefNo.LT-ACT-MFN0616-KN-DIN01V1

ContactLebenorSalesteamforitemsotherthan listedstandardstockitemswithorderreferencenumber.

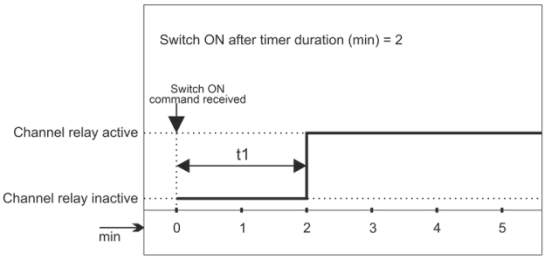
TheInformationinthisdocumentissubjecttochangewithoutanynoticeandshouldbeconfirmedwiththeOEM.

ConfigurableFunctions

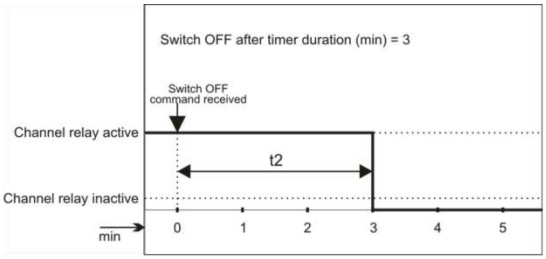
Explanation	Switching Channel	Eachchannelrelayisusedseparatelytoswitcha load.
	Curtain Channel	Eachpairofchannelrelayconstitutesacurtain channel. E.g. for curtain 1, channel 1 and channel 2 can be usedinpair.Forwardandreversecableofthecurtain motorshouldbeconnectedtochannel1andchannel 2.
General Settings	StatusafterKNXBus return	Allchannelrelaysshouldremaininconfiguredstate after KNX bus return. The available states are “Maintain Status” and “OFF/Close”
	StatusafterETS download	Allchannelrelaysshouldremaininconfiguredstate after ETS program download. The available states are “Maintain Status” and “OFF/Close”
	ProfileResponseafter KNX Bus return	Definetheexecutionoftheprofileafter KNXBus return.ProfileresponseafterKNXBusreturncan be configured as “Continue (default)” and “Abort”
	Profile	There are 6 numbers of profiles available for an actuator.Eachprofilehas5sequences,whichcanbe configuredforactionsofchannelrelaysasON/Open, OFF/Close for time duration of each sequence - ON/OFFactionperformedforanindividualchannel relay when Profile activation object of ON/OFF channel is triggered - Open and Close action performed for pair of channelrelaywhenprofileactivationobjectofCurtain channel is triggered

FunctionsforeachSwitchingChannel

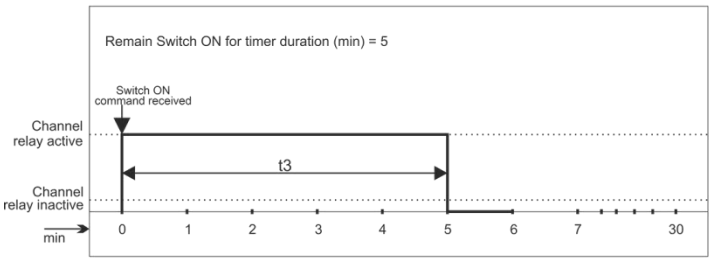
Timer	SwitchONaftertime duration (min) (t1)	SwitchONtheParticularchannelrelayafterdelaytime configured in ETS. This function can be enabled or disable in ETS configuration. Valueavailablefordelaytime:0.5min,1min,2min, 3 min, 4 min, 5 min
	SwitchOFFaftertime duration (min) (t2)	SwitchOFFtheParticularchannelrelayafterdelaytime configured in ETS. This function can be enabled or disable in ETS configuration. Valueavailablefordelaytime:0.5min,1min,2min, 3 min, 4 min, 5 min
	RemainSwitchedONfor time duration (min) (t3)	For Switch ON command, the channel relay remains ON for the time duration configured. If the Switch ON commandreceivesbeforeendofduration,thetimerwill extend (feature use for Staircase function). Valueavailablefordelaytime:0.5sec-30mins

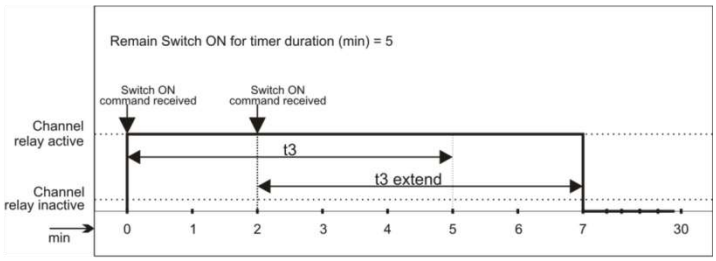


Switch ON after time duration (t1)



Switch OFF after time duration (t2)

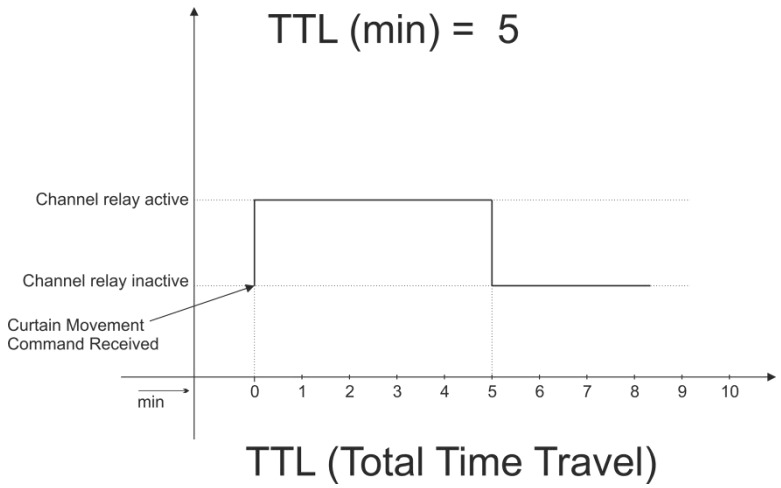




Remain Switch ON for time duration (t3) Staircase Function

Scene	The Scene function is used to switch groups of channel relays into a configurable state. A scene is activated by receipt of a scene value <1-64> on 1-byte scene object.Eachchannelhaving8scenes;eachscenessupportexecutionofanyofthe assigned KNX scenes (1-64) or it can be configured as Not Assigned. Scenememorizationbylongkeypressforsavingthecurrentstateorwecan change and save the state. AvailableactionforSceneas follows: ON,OFF,Profile1,Profile2,Profile3,Profile4,Profile5,Profile6
Lock/Unlock	The Lock function is used to lock the particular channel relay in the current state. It prevents the actuation until an unlock command has been received. Lock/Unlockfunctioncanbetriggeredviaa1-bitobject(0=Unlock,1=Lock) or via 1-byte scene object (scene number = 1-64). The Lock/Unlock function can be enabled or disabled on ETS.

Open/Close	The Open/Close function is used to open and close the curtain. Thisfunction can also be used to open and close electric blinds. TotalTimeTravel(TTL)valuecanbedefinedinETS.TheTTLvalueissamefor Curtain Open and Curtain Close operation. The particular Channel is active for the time duration defined in TTL. Operation of channel: If the forward cable of curtain motor is connected to Channel relay 11 and reverse cable is connected to Channel relay 12, on executing Curtain Open command, Channel relay 11 is turn ON for the time duration defined in TTL and Channel relay 12 is turned OFF. On executing Curtain Close command, Channel relay 12 is turnedONforthetimedurationdefinedinTTLandChannelrelay11isturnedOFF. If Curtain Stop command triggered after executing Curtain Open command, Channel relay 11 is turned OFF and TTL value is reset. If Curtain Stop command triggered after executing Curtain Close command, Channel relay 12 is turned OFF and TTL value is reset. IntheeventofKNXBusfailureorabsenceofauxiliarypowersupply,TTLwill abort. TTL will restart from “0” on receiving Curtain Movement command.	
Curtain Channels	Channel relay-1 + Channel relay-2	Curtain-1
	Channel relay-3 + Channel relay-4	Curtain-2
	Channel relay-5 + Channel relay-6	Curtain-3
	Channel relay-7 + Channel relay-8	Curtain-4
	Channel relay-9 + Channel relay-10	Curtain-5
	Channelrelay-11+Channelrelay-12	Curtain-6



Scene	The Scene function is used to control curtain operation for a configured state. A scene is activated by receipt of a scene value <1-64> on 1-byte scene object. EachPairofchannelshaving8scenes;eachscenessupportexecutionofanyof the assigned KNX scenes (1-64) or it can be configured as Not Assigned. Scenememorizationbylongkeypressforsavingthecurrentstateorwecan change and save the state. AvailableactionforSceneas follows: - Open, Close, Profile 1, Profile 2, Profile 3, Profile 4, Profile 5, Profile 6
Lock/Unlock	TheLockfunctionisusedtolocktheindividualpairofchannelsinthecurrent state. It prevents the actuation until an unlock command has been received. Lock/Unlockfunctioncanbetriggeredbya1-bitobject(0=Unlock,1=Lock) or via 1-byte scene object (scene number = 1-64). The Lock/Unlock function can be enabled or disabled on ETS.

Profile

Profilefeaturecanbeconfiguredtobuildа SequenceControlofthechannelforperiodic change of state (ON/OFF).

Forexample:
Profile-1isconfiguredasbelow
Sequence-1(S-1)->Action->ON/Open->for2Hrs
Sequence-2(S-2)->Action->OFF/Close->for2Hrs
Sequence-3(S-3)->Action->ON/Open->for2Hrs
Sequence-4(S-4)->Action->OFF/Close->for1Hrs
Sequence-5(S-5)->Action->ON/Open->for1Hrs,canbeadditionallyconfiguredtocontinuein loop or stop sequence operation