

Visitor-Counter NTC

Network and Protocol



Table of Contents

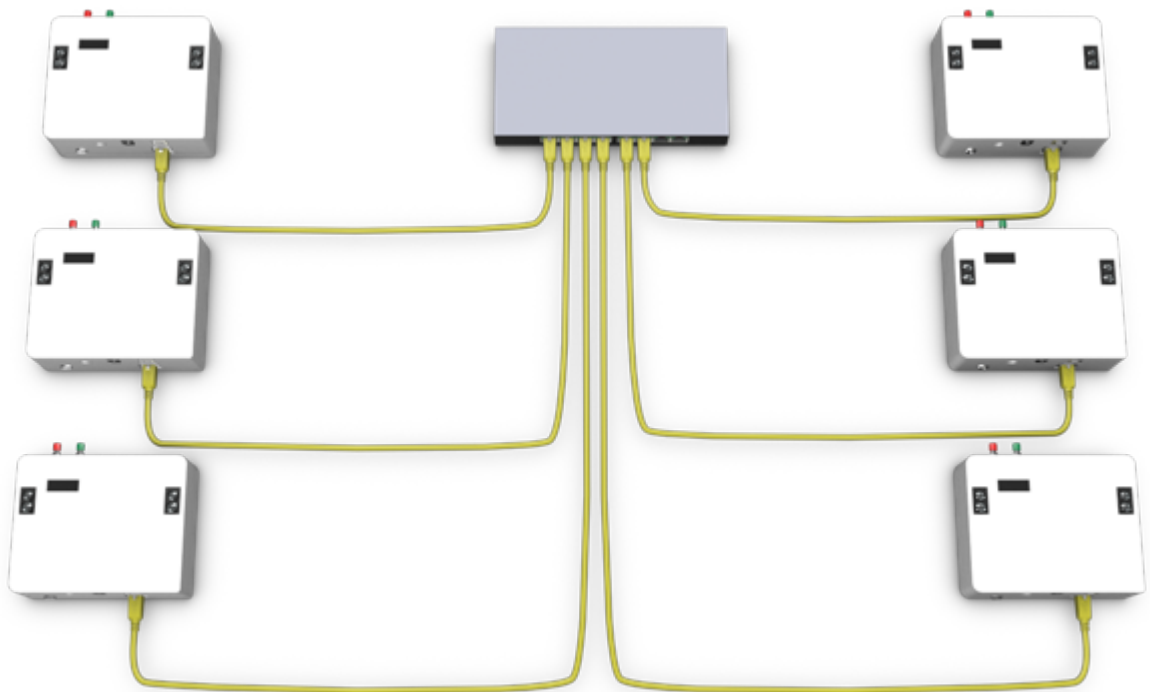
Network & Protocol	1
Network-Connections	2
OP-Mode	5
Net-Mode	7
ID	8
Local-IP	9
Standard Parameters	10
UDP-Communication & Parameters	14
Note of the developer	15

Network & Protocol

By using the integrated Network-Connection it is possible to link multiple NTC-Controllers for shared information and advanced configuration features. The controllers communicate to each other and an optional Master-System via UDP. The Master-System is typically a software on a Computer connected to the same network.

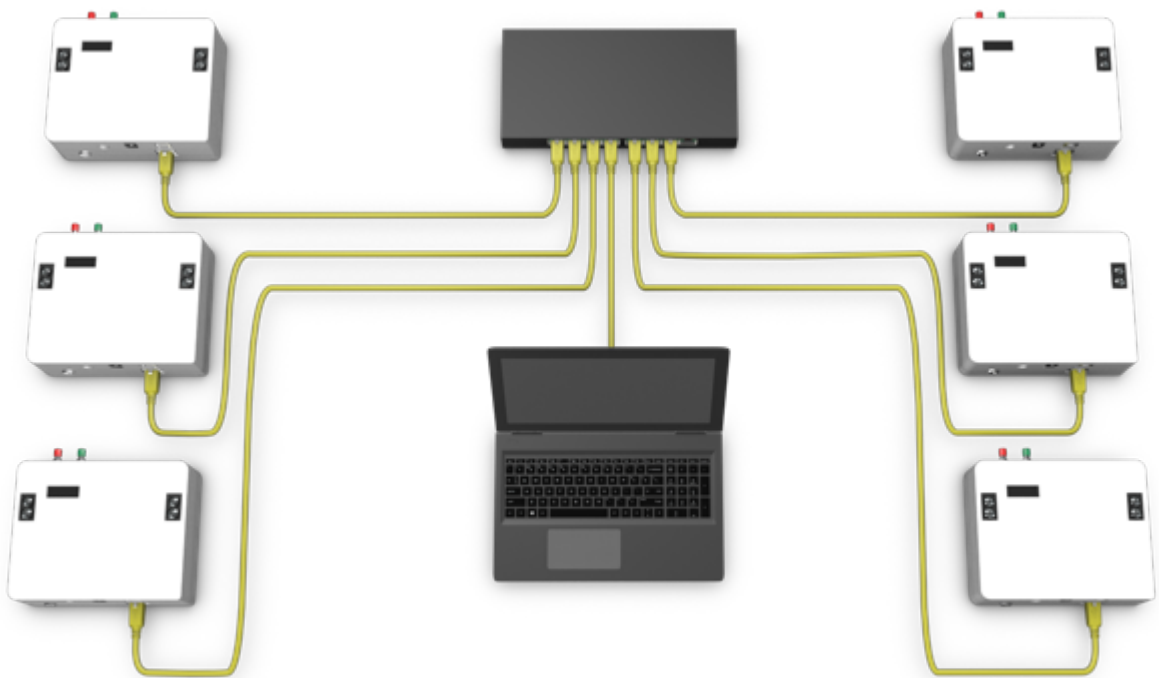
Network-Connection

The communication between the NTC-Controllers works via UDP-messages. After the sharing the connection the controllers are able to exchange their current Visitor-Count.



Network-Connection

For the advanced Communication of NTC-Controllers a computer on the same network is required. It can send updated configuration data and receive operating-information and other data.



Network-Connection

The data from the NTC-Controllers can be used by software like WidgetDesigner to interactively control mediaservers for advanced entrance- and visitor-control.



OP-Mode

Standalone:

The Standalone Mode is the possibility to use an NTC-Controller only with features of a VTC-Controller. Even if powered by PoE there is no communication to other devices on the network. It is however possible to receive data from other controllers or a Master-Device.

NTC-Only:

In NTC-Only Mode multiple NTC-Controllers can be linked together over the connected network. They exchange their count when changes occur.

WD:

The WD Mode enables a direct communication from every controller to a WidgetDesigner instance on a computer attached to the network. The message sent from NTC-Controllers triggers a function called "calludp" via the Remoting Tool. Any content of the function can be user defined.

OP-Mode

WD-Extern:

The WD Mode enables a direct communication from every controller to a WidgetDesigner instance on a computer attached to the network. The message sent from NTC-Controllers triggers a function called "calludp" via the Remoting Tool. Any content of the function can be user defined. The NTC-Controller only sends Sensor- and button changes to the WidgetDesigner Software. All calculations need to be done in Software and send back to the NTC-Controller for Visual Feedback.

WD-Intern:

The WD Mode enables a direct communication from every controller to a WidgetDesigner instance on a computer attached to the network. The message sent from NTC-Controllers triggers a function called "calludp" via the Remoting Tool. Any content of the function can be user defined. The WidgetDesigner acts as an NTC-Controller on the Network using ID 000. Every NTC-Controller does the calculations needed internally and can optionally be controlled by the WidgetDesigner.

OP-Mode

SensorsOnly:

The SensorOnly Mode disables the integrated OLED-display after the startup. The controller then continues to send range-data of both sensors continuously. There will be no count of visitors or control of the LED.

UDP:

UDP Mode is a generic form of communication between NTC-Controllers and a user definable Software. The messages to this Master-Software do not include any triggers or other specific additions.

Net-Mode

DHCP:

In DHCP Mode the NTC-Controller receives an IP-Address from the DHCP-Server on the network. If there is no network-cable connected the NTC-Controller will start in Standalone Mode without a network connection.

Static-IP:

In Static-IP Mode the NTC-Controller starts the network-communication with the IP-Address set in the Configuration-Menu Local-IP. If there is no network-cable connected the NTC-Controller will start in Standalone Mode without a network connection.

ID

The ID of an NTC-Controller is used for identification and communication on the network. Therefore it is important to use different IDs when working with multiple NTC-Controllers in one network. IDs in the range between 2 and 254 are free for configuration while IDs 0 and 1 are reserved for communication with the master-software, an external hardware-controller. ID 255 is used for broadcast messages to all controllers.

Local-IP

The local IP-Address is required when working with NTC-Controllers in Static-IP mode. Since in this operating mode the IP-Address is not automatically obtained it must be set by the user. The standard address is set as 10.0.98.2.

Standard Parameters

Parameter	Standard-Value
ID	2
Distance	200
Visitors	5
Direction	1
OP-Mode	1
Net-Mode	1
IP-Adresse	10.0.98.2
Subnet-Mask	255.255.0.0
NTC-Port	2255
Master-Port	2256
Lock Buttons	0
Lock Sensors	0
Send to	All 0
Receive from	All 0
RGB1-State	0
RGB2-State	0

UDP-Communication & Parameters

All messages for UDP-Communication follow a consistent pattern. The communication between the NTC-Controllers only includes the current count whenever an update occurs. The communication to a master-software includes count, status of sensors and buttons, range of both sensors and the status of both RGB-LEDs.

UDP-Communication & Parameters

Format of the UDP-Messages:

Prefix, TargetID, SenderID/SubjectID, Payload

XXXX,XXX,XXX,XXXXXXXXXXXXXXXXXXXX

Prefix:

Four characters for unique Identification of the message.

TargetID:

ID of the targeted NTC-Controller.

SenderID/SubjectID:

ID of the NTC-Controller sending the message or ID of the NTC-Controller to apply the status change to.

Payload:

Content of the message e.g. IP-Address, count, RGB-LED-Status, etc. It is very important to maintain the listed Format of the Payload to guarantee correct execution of the desired action.

UDP-Communication & Parameters

Functions/ Parameters	Prefix	Target ID	SubjectID/ SenderID	Payload
Initialization	ZZZZ	255	Sender ID	
Init answer	ZZZY	Received ID	Sender ID	count,ledState01,ledState02
Receive disable	ZZYY	Receiver ID	Subject ID	0
Receive enable	ZZYY	Receiver ID	Subject ID	1
Send disable	ZYYY	Receiver ID	Subject ID	0
Send enable	ZYYY	Receiver ID	Subject ID	1
LED1	YYYY	Receiver ID	Sender ID	0
LED1 Green	YYYY	Receiver ID	Sender ID	1
LED1 Red	YYYY	Receiver ID	Sender ID	2
LED1 Off	YYYY	Receiver ID	Sender ID	3
LED2	YYZZ	Receiver ID	Sender ID	0
LED2 Green	YYZZ	Receiver ID	Sender ID	1
LED2 Red	YYZZ	Receiver ID	Sender ID	2
LED2 Off	YYZZ	Receiver ID	Sender ID	3
Count	YYYZ	Receiver ID	Sender ID	0-99999
To Master	AAAA	Receiver ID	Sender ID	count,S1,S2,B1,B2,ledState01, ledState02,dist1,dist2
Feedback	AAAB	Receiver ID	Sender ID	ABABA
set ID	ABBB	Receiver ID	Sender ID	2-254
set IP	AABB	Receiver ID	Sender ID	255.255.255.255
set Subnet	BBBB	Receiver ID	Sender ID	255.255.255.255
deactivate Buttons	BAAA	Receiver ID	Sender ID	0-1
set max Distance	BBAA	Receiver ID	Sender ID	0-9999
restart	BBBA	Receiver ID	Sender ID	1
set Slave Port	CCCC	Receiver ID	Sender ID	2255
set Master Port	CCCA	Receiver ID	Sender ID	2256
deactivate Sensors	AACC	Receiver ID	Sender ID	0/1
Direction	DDDD	Receiver ID	Sender ID	1/2 (L>R/R>L)
Operating Mode	DDDA	Receiver ID	Sender ID	1-6
Network Mode	DDAA	Receiver ID	Sender ID	1-2

UDP-Communication & Parameters

Functions/ Parameters	Payload	Payload Format
Initialization		
Init answer	count,ledState01,ledState02	xxxxx,x,x
Receive disable	0	X
Receive enable	1	X
Send disable	0	X
Send enable	1	X
LED1	0	X
LED1 Green	1	X
LED1 Red	2	X
LED1 Off	3	X
LED2	0	X
LED2 Green	1	X
LED2 Red	2	X
LED2 Off	3	X
Count	0-99999	XXXXX
To Master	count,S1,S2,B1,B2,ledState01, ledState02,dist1,dist2	XXXXX,X,X,X,X,X,XXXX,XXXX
Feedback	ABABA	XXXXX
set ID	2-254	XXX
set IP	255.255.255.255	XXX.XXX.XXX.XXX
set Subnet	255.255.255.255	XXX.XXX.XXX.XXX
deactivate Buttons	0-1	X
set max Distance	0-9999	XXXX
restart	1	X
set Slave Port	2255	XXXX
set Master Port	2256	XXXX
deactivate Sensors	0/1	X
Direction	1/2 (L>R/R>L)	X
Operating Mode	1-6	X
Network Mode	1-2	X

Note of the developer

The shipped system consist of individually certified components for which we can not take an accountability. The assembly is done in Germany and with great precision and care by highly qualified personnel.

The used firmware is developed directly by us and was put to test multiple times before shipping to ensure a failure-free operation. We are constantly developing the the Firmware and the user interface to extend the functionality or improve the user experience.

Every shipped system is checked for correct operation before shipping.

For any questions regarding this product please contact *support@looplight.de*.