

## Fonctionnement Serveur KNX.

Les adresses KNX ont été déclarées de la manière suivante :

```
/*  
DECLARATION ADRESSE KNX  
***/  
//PASSERELLE IP/KNX 1.1.250  
#define ADI_PAS_MSB 0x11  
#define ADI_PAS_LSB 0xfa  
//ADRESSE DE GROUPE CAPTEUR DE TEMPERATURE  
#define ADG_TMP_MSB 0x30  
#define ADG_TMP_LSB 0x01  
//ADRESSE INDIVIDUELLE CAPTEUR DE TEMPERATURE  
#define ADI_TMP_MSB 0x11  
#define ADI_TMP_LSB 0x07  
//ADRESSE DE GROUPE ACTIONNEUR LAMPE  
#define ADG_LMP_MSB 0x30  
#define ADG_LMP_LSB 0x00  
//ADRESSE INDIVIDUELLE ACTIONNEUR LAMPE  
#define ADI_LMP_MSB 0x11  
#define ADI_LMP_LSB 0x01  
//ADRESSE DE GROUPE VARIATEUR  
#define ADG_VAR_MSB 0x30  
#define ADG_VAR_LSB 0x02  
//ADRESSE INDIVIDUELLE VARIATEUR  
#define ADI_VAR_MSB 0x11  
#define ADI_VAR_LSB 0x03
```

Le serveur écoute sur le port UDP 3672 et transmet sur le port UDP 3671

Il est possible de :

- Faire une demande température (valeur fixe de 0x0C4C = 22,0°C – Voir ci-dessous). Format F16.
- Envoyer une commande de lampe (écriture 1 bit) – Format B1
- Faire une demande d'état de lampe (lecture 1 bit) – Format B1
- Envoyer une commande de variateur (écriture 1 octet) – Format U8
- Faire une demande d'état de variateur (lecture 1 octet) – Format U8

## FORMAT F16

### Fonctionnement de la donnée :

Format:	2 octets: F <sub>16</sub>																			
octet nr	2 MSB		1 LSB																	
field names	FloatValue																			
encoding	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">M</td><td style="padding: 2px;">E</td><td style="padding: 2px;">E</td><td style="padding: 2px;">E</td><td style="padding: 2px;">M</td><td style="padding: 2px;">M</td> </tr> </table>				M	E	E	E	M	M	M	M	M	M	M	M	M	M	M	M
M	E	E	E	M	M	M	M	M	M	M	M	M	M	M	M					
Encoding:	FloatValue = (0,01*M)*2 <sup>(E)</sup> E = [0 ... 15] M = [-2 048 ... 2 047], two's complement notation For all Datapoint Types 9.xxx, the encoded value 7FFFh shall always be used to denote invalid data.																			
Range:	[-671 088,64 ... 670 760,96]																			
<b>Datapoint Types</b>																				
ID:	Name:	Range:	Unit:	Resol.:																
9.001	DPT_Value_Temp	-273 °C ... 670 760 °C	°C	1 °C																
9.002	DPT_Value_Tempd	-670 760 K ... 670 760 K	K	1 K																
9.003	DPT_Value_Tempa	-670 760 K/h ... 670 760 K/h	K/h	1 K/h																
9.004	DPT_Value_Lux	0 Lux ... 670 760 Lux	Lux	1 Lux																
9.005	DPT_Value_Wsp	0 m/s ... 670 760 m/s	m/s	1 m/s																
9.006	DPT_Value_Pres	0 Pa ... 670 760 Pa	Pa	1 Pa																
9.007	DPT_Value_Humidity	0 % ... 670 760 %	%	1 %																
9.008	DPT_Value_AirQuality	0 ppm ... 670 760 ppm	ppm	1 ppm																
9.010	DPT_Value_Time1	-670 760 s ... 670 760 s	s	1 s																
9.011	DPT_Value_Time2	-670 760 ms ... 670 760 ms	ms	1 ms																
9.020	DPT_Value_Volt	-670 760 mV ... 670 760 mV	mV	1 mV																
9.021	DPT_Value_Curr	-670 760 mA ... 670 760 mA	mA	1 mA																
9.022	DPT_PowerDensity	-670 760 W/m <sup>2</sup> ... 670 760 W/m <sup>2</sup>	W/m <sup>2</sup>	1 W/m <sup>2</sup>																
9.023	DPT_KelvinPerPercent	-670 760 K/% ... 670 760 K/%	K/%	1 K/%																
9.024	DPT_Power	-670 760 kW ... 670 760 kW	kW	1 kW																
9.025	DPT_Value_Volume_Flow	-670 760 l/h ... 670 760 l/h	l/h	1 l/h																

On reçoit du capteur de température la valeur 0C 4C<sub>(H)</sub> = 22,0°C

M:10001001100 = 1100 décimal ⇒ \*0.01 = 11

E : 0001 = 1 décimal ⇒ 2<sup>1</sup> = 2 ⇒ 11\*2 = 22°C

**FORMAT B1**

**4.2.2 Datapoint Types B<sub>1</sub>**

Format:	1 bit: B <sub>1</sub>											
octet nr	1											
field names	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px; text-align: center;">b</td> </tr> </table>											b
										b		
encoding	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px; text-align: center;">B</td> </tr> </table>											B
										B		
Range:	b = {0,1}											
Unit:	None.											
Resol.:	(not applicable)											

Datapoint Types		
ID:	Name:	Encoding: b
1.001	DPT_Switch	0 = Off
		1 = On
1.002	DPT_Bool	0 = False
		1 = True
1.003	DPT_Enable	0 = Disable
		1 = Enable
1.004	DPT_Ramp	0 = No ramp
		1 = Ramp
1.005	DPT_Alarm	0 = No alarm
		1 = Alarm
1.006	DPT_BinaryValue	0 = Low
		1 = High
1.007	DPT_Step	0 = Decrease
		1 = Increase
1.008	DPT_UpDown	0 = Up
		1 = Down
1.009	DPT_OpenClose	0 = Open
		1 = Close

ID:	Name:	Encoding: b
1.010	DPT_Start	0 = Stop
		1 = Start
1.011	DPT_State	0 = Inactive
		1 = Active
1.012	DPT_Invert	0 = Not inverted
		1 = Inverted
1.015	DPT_Reset	0 = no action (dummy)
		1 = reset command (trigger)
1.016	DPT_Ack	0 = no action (dummy)
		1 = acknowledge command (trigger), e.g. for alarming
1.017	DPT_Trigger	0, 1 = trigger
1.018	DPT_Occupancy	0 = not occupied
		1 = occupied
1.019	DPT_Window_Door	0 = closed
		1 = open
1.021	DPT_LogicalFunction	0 = logical function OR
		1 = logical function AND
1.022	DPT_Scene_AB	0 = scene A
		1 = scene B

## FORMAT U8

### 4.6.2 Scaled values

Format:	8 bit: U <sub>8</sub>																																																						
octet nr	1																																																						
field names	Unsigned Value																																																						
Encoding	U U U U U U U U																																																						
Encoding:	binary encoded																																																						
	<table border="1"> <tr> <td></td> <td>msb</td> <td></td> <td>lsb</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>U</td> <td>U</td> <td>U</td> <td>U</td> <td>U</td> <td>U</td> <td>U</td> <td>U</td> </tr> <tr> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td></td> <td>⋮</td> <td></td> <td></td> <td></td> <td>⋮</td> <td></td> <td></td> <td>⋮</td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> </table> <p>= range min. /off = value "low" = range max.</p>		msb		lsb							U	U	U	U	U	U	U	U		0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	1		⋮				⋮			⋮		1	1	1	1	1	1	1	1
	msb		lsb																																																				
	U	U	U	U	U	U	U	U																																															
	0	0	0	0	0	0	0	0																																															
	0	0	0	0	0	0	0	1																																															
	⋮				⋮			⋮																																															
	1	1	1	1	1	1	1	1																																															
Range:	U = [0...255]																																																						

#### Datapoint Types

ID:	Name:	Range:	Unit:	Resol.:
5.001	DPT_Scaling	[0...100]	%	≈ 0,4 %
5.003	DPT_Angle	[0...360]	°	≈ 1,4°
5.004	DPT_Percent_U8	[0..255]	%	1 %

#### Examples

Datapoint Type	Encoded Value			Resolution
	50 %	100 %	255 %	
5.001	80h	FFh	Out of encodable range.	≈ 0,4 %
5.004	32h	64h	FFh	1 %