

### **UNIVERSAL DIMMER**

### **RE KNT 000**





### **INSTRUCTIONS MANUAL**

### <u>DíNUY</u>

#### **General Description**

I-channel universal (leading and trailing-edge) dimming actuator for R, L or C loads:

- Incandescent or 230V Halogen lamps.
- LV Halogen lamps with magnetic transformer.
- LV Halogen lamps with electronic transformer.
- Dimmable Fluo-compact lamps.
- Dimmable 230V LED lamps.
- Dimmable 12V~ LED lamps with electronic transformer.

Built-in potentiometer on the front of the dimmer, which allows checking manually the correct operation of the device without connecting the Bus:

- Manual (any position above the minimum): with the potentiometer the lamps can be regulated without having to connect the Bus.
- Automatic (at minimum): operation through the Bus.

Protected against overload and short circuit. Incorporates resettable heating protection.

Anti-panic input for safety systems: enabling this input, in an emergency the lamps will light at maximum ignoring the dimming.

Programming and commissioning by ETS3 or ETS4. It has standard connecting terminal.

#### **Technical Data**

Nominal	voltage	230V~ 50Hz					
Supply fro	om KNX bus	21 ~ 32V <sub>DC</sub>					
Connectio	on	Mediante terminal de conexión suministrado					
Commissi	ioning	ETS3 or ETS4					
KNX Med	ia	PT1					
Channels		1					
Configura	ition mode	System Mode					
Insulation	n voltage	4KV <sub>AC</sub> (bus/mains voltage)					
	Incandescence	100 ~ 1.000W					
	Halogens 230V	100 ~ 1.000W					
	Halog. Ferromagnetic transfo.	100 ~ 800W					
Load	Halog. Electronic transfo.	100 ~ 1.000W					
	LED 230V	7 ~ 300W					
	LED 12V~ Electronic transfo.	< 18 transfo. & 1lamp/transfo.					
	Compact-fluorescence (CFL)	20 ~ 400W					
Dimensio	ns	5 modules, 87.5x65mm					
Mounting	3	DIN 46277 rail					
Working temperature		-5ºC ~ +45ºC					
Storage temperature		-30ºC ~ +70ºC					
Protectio	n degree	IP20 (EN60529)					
Directives	5	Low-voltage 73/23/EEC EMC 204/108/EC					

### <u>Dínuy</u>

According to the Standards

KNX 2.0 EN60669-1, 2-1, 2-3

Marking

EIB/KNX

#### **Project Development and Commissioning**

#### I – Type of Dimmer

- o Basic Dimmer
  - It has the following communication objects:

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A Proyecto Dimmer	Número +	Nombre	Función del Objeto	Descripción	Direcciones de Grupo	Longitud	С	R	W	Т	U	Tipo de Datos	Prioridad
Edificios	<b>■</b> # 0	Object 0 -SwitchOnOff Input	Switch			1 bit	С	-	W	-	-	on/off	Baja
Hunciones	<b>■</b> #]1	Object 1-Relative Set value control Input	Relative Set value control			4 bits	С	-	W	-	-	dimming control	Baja
🔺 🔢 Topología	<b>■</b> ‡ 2	Object 2 - Absolute Setvalue Control Input	DimminValue			1 Byte	С	-	W	-	-	percentage (0100%)	Baja
D Área principal (Backbone)	📫 3	Object 3 -Timed StartStop Input	Timed Start-Stop	1 bit	С	-	W	-	-	on/off	Baja		
🔺 🔛 1 Nueva área	<b>■‡</b> 4	Object 4 -Forced Input	Forced				С	-	W	-	-	state control	Baja
🖼 1.0 Línea principal	<b>■</b> ₽ 5	Object 5 -Scene Number Input	Scene numbered			1 Byte	С	-	W	-	-	scene number	Baja
🔺 🗄 1.1 Nueva línea	<b>■</b> ‡ 6	Object 6-Info Switch On-Off Output	Info Switch On-Off			1 bit	С	R	-	Т	-	on/off	Baja
▲ ▲ 1.1.1 Universal Dimmer controller	<b>■‡</b> 7	Object 7-Info Actual Dimming Value Output	Info Dimming Value			1 Byte	С	R	-	Т	-	percentage (0100%)	Baja
■‡0: Object 0 -SwitchOnOff Input - Switch	<b>■</b> ‡ 8	Object 8- Dimming Speed (Seg.) Input	Dimming Speed (Seg.)			2 Bytes	С	-	W	-	-	time (ms)	Baja
■式1: Object 1-Relative Set value control Input - Relative Set value	13	Object 13-Regulation curve selection Input	Regulation curve selection			1 Byte	С	-	W	-	-	counter pulses (0255)	) Baja
■之2: Object 2 - Absolute Setvalue Control Input - DimminValue	<b>■‡</b> 14	Object 14-Dimmer block Input	Dimmer block			1 bit	С	-	W	-	-	boolean	Baja
■之3: Object 3 -Timed StartStop Input - Timed Start-Stop													
■之4: Object 4 -Forced Input - Forced													
■ 2 5: Object 5 -Scene Number Input - Scene numbered													
■之6: Object 6-Info Switch On-Off Output - Info Switch On-Off													
■之 7: Object 7-Info Actual Dimming Value Output - Info Dimming													
■\$\$ B: Object 8- Dimming Speed (Seg.) Input - Dimming Speed (Seg.)													
■Z 13: Object 13-Regulation curve selection Input - Regulation cur													
■Z 14: Object 14-Dimmer block Input - Dimmer block													
Direcciones de Grupo													
Todos los Aparatos													
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#### • Complex Dimmer

#### Besides the communication objects of the "Basic Dimmer" has the following objects:

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4 🔄 Proyecto Dimmer	Número +	Nombre		Función del Objeto	Descripción	Direcciones de Grupo	Longitud	С	R	W	Т	U	Tipo de Datos	Prioridad
Edificios	<b>■</b> ‡ 0	Object 0 -SwitchOnOff Inp	out	Switch			1 bit	С	-	W	-	-	on/off	Baja
Hunciones	<b>■</b> # 1	Object 1-Relative Set value	e control Input	Relative Set value control			4 bits	С	-	W	-	-	dimming control	Baja
🔺 📶 Topología	<b>■</b> ‡ 2	Object 2 - Absolute Setval	ue Control Input	DimminValue			1 Byte	С	-	W	-	-	percentage (0100%)	Baja
I dírea principal (Backbone)	📫 3	Object 3 -Timed StartStop	Input	Timed Start-Stop			1 bit	С	-	W	-	-	on/off	Baja
4 🔡 1 Nueva área	■‡ 4	Object 4 -Forced Input		Forced			2 bits	С	-	W	-	-	state control	Baja
🙀 1.0 Línea principal	<b>■</b> ‡ 5	Object 5 -Scene Number I	nput	Scene numbered			1 Byte	С	-	W	-	-	scene number	Baja
▲ 🗄 1.1 Nueva línea	<b>■</b> ‡ 6	Object 6-Info Switch On-C	Off Output	Info Switch On-Off			1 bit	С	R	-	т	-	on/off	Baja
▲ ▲ 1.1.1 Universal Dimmer controller	<b>■2</b> 7	Object 7-Info Actual Dimm	ning Value Output	Info Dimming Value			1 Byte	С	R	-	т	-	percentage (0100%)	Baja
C: Object 0 -SwitchOnOff Input - Switch	<b>■</b> ‡ 8	Object 8- Dimming Speed	(Seg.) Input	Dimming Speed (Seg.)			2 Bytes	С	-	W	-	-	time (ms)	Baja
1: Object 1-Relative Set value control Input - Relative Set value	<b>■</b> ‡ 9	Object 9- Load detected C	Output	Load detected			1 Byte	С	R	-	Т	-	1-byte	Baja
2: Object 2 - Absolute Setvalue Control Input - DimminValue	<b>■‡</b> 10	Object 10- Temperature in	side dimmer Outpu	u Temperature inside dimm	e		2 Bytes	С	R	-	Т	-	temperature (°C)	Baja
2 3: Object 3 -Timed StartStop Input - Timed Start-Stop	11	Object 11- High Temperat	ure Alarm Output	High Temperature			1 bit	С	R	-	т	-	boolean	Baja
■之 4: Object 4 -Forced Input - Forced	<b>■</b> ‡ 12	Object 12- Critical Temper	ature Alarm Output	t Critical Temperature			1 bit	С	R	-	т	-	boolean	Baja
■ 2 5: Object 5 -Scene Number Input - Scene numbered	<b>■‡</b> 13	Object 13-Regulation curv	e selection Input	Regulation curve selection	n		1 Byte	С	-	W	-	-	counter pulses (0255)	) Baja
€ 6: Object 6-Info Switch On-Off Output - Info Switch On-Off	<b>■‡</b> 14	Object 14-Dimmer block In	nput	Dimmer block			1 bit	С	-	W	-	-	boolean	Baja
7: Object 7-Info Actual Dimming Value Output - Info Dimming	<b>■‡</b> 15	Object 15-Dimmer status	Output	Dimmer status			1 Byte	С	R	-	Т	-		Baja
2 8: Object 8- Dimming Speed (Seg.) Input - Dimming Speed (Seg.)														
2 9: Object 9- Load detected Output - Load detected														
■之 10: Object 10- Temperature inside dimmer Output - Temperatu														
■ 2 11: Object 11- High Temperature Alarm Output - High Temper														
■2 12: Object 12- Critical Temperature Alarm Output - Critical Tem														
■ \$\$\delta\$ \$\$\$ 13: Object 13-Regulation curve selection Input - Regulation cur														
■ズ 14: Object 14-Dimmer block Input - Dimmer block														
15: Object 15-Dimmer status Output - Dimmer status														
Direcciones de Grupo														
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### Dinuy

No_	Namo	Function	Longth	C_	<b>R</b> _	۱۸/	т		Data Type	Priority	Description	Dimme	er Type
-14-	Name		Lengti		ĸ			-0	Data Type	Thomas	Description	Basic	Advanced
0	SwitchOnOff Input	Switch	1 bit	$\checkmark$	•	$\checkmark$	•	•	on/off	Low	Switch ON (1) or OFF (0)	$\checkmark$	$\checkmark$
1	Relative Set value control Input	Relative Set value control	4 bits	$\checkmark$	•	$\checkmark$	•	•	dimming control	Low	Relative dimming value (increase)	$\checkmark$	$\checkmark$
2	Absolute Set value control Input	Dimming Value	1 Byte	$\checkmark$	•	$\checkmark$	•	•	percentage (0100%)	Low	Absolute dimming value (total)	$\checkmark$	$\checkmark$
3	Timed StartStop Input	Timed Start-Stop	1 bit	$\checkmark$	•		•	•	on/off	Low	Beginning or end of a timed switching	$\checkmark$	$\checkmark$
4	Forced Input	Forced	2 bits	$\checkmark$	•		•	•	state control	Low		$\checkmark$	$\checkmark$
5	Scene Number Input	Scene numbered	1 Byte	$\checkmark$	•	$\checkmark$	•	•	scene number	Low	Number of a Scene	$\checkmark$	$\checkmark$
6	Info Switch On-Off Output	Info Switch On-Off	1 bit	V	$\checkmark$	•	$\checkmark$	•	on/off	Low	Status information (ON or OFF)	$\checkmark$	$\checkmark$
7	Info Actual Dimming Value Output	Info Dimming Value	1 Byte	$\checkmark$	$\checkmark$	•	$\checkmark$	•	percentage (0100%)	Low	Information of the dimming level (%)	$\checkmark$	$\checkmark$
8	Dimming Speed (Sec.) Input	Dimming Speed (Sec.)	2 Bytes	V	•		•	•	time (ms)	Low	Dimming speed (sec)	$\checkmark$	$\checkmark$
9	Load detected Output	Load detected	1 Byte	$\checkmark$	$\checkmark$	•	$\checkmark$	•	1-byte	Low	Information about the type of load detected (if automatic detection)	•	$\checkmark$
10	Temperature inside dimmer Output	Temperature inside dimmer	2 Bytes	$\checkmark$	$\checkmark$	•		•	temperature (ºC)	Low	Temperature inside the dimmer	•	
11	High Temperature Alarm Output	High Temperature	1 bit	$\checkmark$	•	$\checkmark$	•	•	boolean	Low	High temperature alarm	•	
12	Critical Temperature Alarm Output	Critical Temperature	1 bit	$\checkmark$	•	$\checkmark$	•	•	boolean	Low	Critical temperature alarm	•	$\checkmark$
13	Regulation curve selection Input	Regulation curve selection	1 Byte	$\checkmark$	•	$\checkmark$	•	•	counter pulses (0255)	Low			
14	Dimmer block Input	Dimmer block	1 bit	$\checkmark$	•	$\checkmark$	•	•	boolean	Low	Dimmer block	$\checkmark$	
15	Dimmer status Output	Dimmer status	1 Byte	$\checkmark$		•		•		Low		•	

- Load type
  - Universal: the dimmer makes the automatic detection of the type of load. This mode can be set if the connected load is incandescent or halogen (R, L or C). Do not mix L and C loads in the same dimmer.
  - R type: the connected load is resistive: incandescence or 230V halogen lamps.
  - L type: the connected load is inductive: 12V~ halogen lamps with magnetic transformer.
  - C type: the connected load is capacitive: 12V~ halogen lamps with electronic transformer.
  - LED 230V: 230V dimmable LED lamp.
  - LED 12V: 12V~ dimmable LED lamp with electronic transformer.
  - FCL: dimmable Fluo-Compact lamps.

#### 2 – Functional Parameters

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Improyecto Dimmer	Dispositivo: 1.1.1 Universal Dimmer con	troller		
Edificios	<ul> <li>MAIN PARAMETERS</li> </ul>	Minimum Brinkterner (9/)	1	
Funciones	Type off Dimmer	winimum brightness (76)	1	
Topología	Functional Parameters	Maximum Brightness (%)	22	
Area principal (Backbone)	Adittional Parameters			· ·
I Nueva área		Soft Start time (mSeg)	1000	
🙀 1.0 Línea principal				
▲ 🗧 1.1 Nueva línea		Soft Turn off time (mSeg)	1000	
I.1.1 Universal Dimmer controller		Switchonmode	Programable brightness (select de % off brig	ahtnes -
[2]0: Object 0 -SwitchOnOff Input - Switch		Switchonnode	Trogramable brightness (select de % on brig	gitales
[4] 1: Object 1-Relative Set value control Input - Relative Set value		Switch On Brightness (%)	3	
Z 2: Object 2 - Absolute Setvalue Control Input - DimminValue				
IZI3: Object 3 -Timed StartStop Input - Timed Start-Stop				
I 4: Object 4 -Forced Input - Forced				
↓ Scene Number Input - Scene numbered				
I Compare A Comparison Compar				
■Z 7: Object 7-Info Actual Dimming Value Output - Info Dimming				
■Z 8: Object 8- Dimming Speed (Seg.) Input - Dimming Speed (Seg.)				
■2 9: Object 9- Load detected Output - Load detected				
■2 10: Object 10- Temperature inside dimmer Output - Temperatu				
■2 11: Object 11- High Temperature Alarm Output - High Temper				
■ 2 12: Object 12- Critical Temperature Alarm Output - Critical Tem				
■     13: Object 13-Regulation curve selection Input - Regulation cur				
■之 14: Object 14-Dimmer block Input - Dimmer block				
■‡ 15: Object 15-Dimmer status Output - Dimmer status				
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- Minimum Brightness: sets the minimum dimming level of the lamps in % (1% ~ 100%).
- Maximum Brightness: sets the maximum dimming level of the lamps in % (1% ~ 100%).
- Soft Start time: sets the time delay of the switching-on from the reception of the telegram until it reaches the end value. Among other features, allows to avoid damaging the lamps in case of incandescent or halogens. It also allows progressive switching like a light scene. This time can be set 0 and 65535msec.
- Soft Turn off time: sets the time delay of the switching-off from the reception of the telegram until it reaches the end value. It also allows progressive switching like a light scene. This time can be set 0 and 65535msec.
- o Switch On mode: sets how the lamps are switched-on each time it receives an ON telegram.

# <u>DíNUY</u>

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Improvecto Dimmer     Dispositivo: 1.1.1 Universal Dimmer controller										
Edificios	<ul> <li>MAIN PARAMETERS</li> </ul>	Minimum Prightness (%)	4							
Funciones	Type off Dimmer	Winimum Brightness (76)	1							
III Topología	Functional Parameters	Maximum Brightness (%)	22							
O Area principal (Backbone)	Adittional Parameters									
A 🔛 1 Nueva área		Soft Start time (mSeg)	1000							
ling 1.0 Línea principal										
A 🗄 1.1 Nueva linea		Soft Turn off time (mSeg)	1000							
11.1 Universal Dimmer controller		Switchonmode	Cyclic Work							
↓(0: Object 0 -SwitchOnOff Input - Switch		Sinteriorinode	cyclic tronk							
↓]: Object 1-Kelative Set value control Input - Kelative Set value		Switch ON Ramp time on in cyclic mode	60							
I = 2: Object 2 - Absolute SetValue Control Input - Dimmin Value		(Seg)								
■+[3: Object 3 - Timed StartStop Input - Timed Start-Stop		ON time (Seg)	60							
■↓4: Object 4 - Porced input - Porced										
■↓ G. Object 5 -Scene Number Input - Scene Numbered ■↓ G. Object 6 Info Switch On Off Output. Info Switch On Off		Switch OFF Ramp time on in cyclic mode	60							
→ 7. Object 7 Info Actual Dimming Value Output - Info Switch On-On		(Seg)								
28: Object 8- Dimming Speed (Seg.) Input - Dimming Speed (Seg.)		OFF time (Seg)	60							
⇒ Quiect 9 - Load detected Output - Load detected										
In the second detected output - toud detected In the second detected output - Temperature inside dimmer Output - Temperature										
11: Object 11- High Temperature Alarm Output - High Temperature										
■213: Object 13-Regulation curve selection Input - Regulation cur										
14: Object 14-Dimmer block Input - Dimmer block										
■ 2 15: Object 15-Dimmer status Output - Dimmer status										
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- **Minimum Brightness:** it will be switched-on at the value set in the parameter "Minimum Brightness".
- **Maximum Brightness:** it will be switched-on at the value set in the parameter "Maximum Brightness".
- **Programmable Brightness:** it will be switched-on at the value set in the parameter "Switch On Brightness (%)": 0% ~ 100%.
- Cyclic Work: allows doing switching cycles:
  - Switch ON Ramp time: time delay since the telegram is received until it reaches the maximum set value: 0sec ~ 65535sec.
  - ON time: time that the lamps are turned-on to the maximum set value: 0sec ~ 65535sec.
  - Switch OFF Ramp time: time delay since the telegram is received until it reaches the minimum set value: 0sec ~ 65535sec.
  - OFF time: time that the lamps are turned-on to the minimum set value: 0sec ~ 65535sec.



## <u>DíNUY</u>

#### 3 – Additional Parameters



- Timer time delay: time delay in case of receiving a timing telegram: 0sec ~ 255sec.
- **Pre-warning in Timer:** can make a brief flickering of the lamps a time before the end of the set time: 0sec ~ 255sec.
- **Ripple Filter State:** the ripple is an effect on the supply voltage that can affect the right functioning of the Dimmer. This filter can be enabled or disabled.
- Action after power supply or KNX bus fault: sets the state the dimmer will come back after a fault on the power supply or KNX bus: ON, OFF or the same level before the failure ("Brightness before power supply fails").
- **Number of attempts to switch on after short-circuit detect:** sets the number of times that the dimmer tries to reset upon detection of a short-circuit.
- **Time between attempts to switch on after short-circuit detect:** sets the time between each attempt to reset upon detection of a short-circuit: 0sec ~ 65535msec.