UD-500-M2/B
UD-500-M2/BP

General

The universal dimmer is suitable for all current dimmable illuminant types. There are two separate dimmer outputs which can each carry a load of 500W.

Each channel can be parameterised separately to the relevant load type (leading edge or trailing edge mode). The dimmer independently checks the connected load by learning it when the operating voltage is applied for the first time. The learnt load is stored in the dimmer's non-volatile flash memory. This means that the load does not have to be re-learnt every time the operating voltage is disrupted. The load is only learnt again if there is a significant change to the connected load. If the dimmer fails to learn the load after the third attempt, an error message is issued and you will have to configure the dimmer to the leading edge or trailing edge mode. The dimmer works with an internal dimming resolution of 12 bits. This prevents annoying, visible dimming steps with slow fading.

Parameterisation in ProgrammDesigner allows you to set various functions, such as switch on/off behaviour, dimming curves, feedback signals, relative or absolute fade time calculation, minimum and maximum values, power frequency, emergency functions etc.

Each dimming channel can be upgraded with up to three 1000W slave modules (= total power of 3000W) .

In version UD-500-2/BP the dimmer features two potentiometers which allow you to set the standard brightness or the brightness in emergency mode (no BUS signal available) for each channel depending on the parameterisation.

New from version 4.0: the dimmer can be used as a BUS and standard dimmer.

Inputs / Outputs

- 2 dimmer outputs (trailing edge 15W to 500W, leading edge 35W to 500W)
- 2 control inputs 0(1)-10V for emergency mode
- 2 slave outputs for increased load

Function displays

- 1 red LED indicates the operating voltage

LED Status	Significance
OFF	no operating voltage
ON	operating voltage no error
Steady flashing	operating voltage frequency outside set range
2x flashing	zero error
3x flashing	no parameter data

- 1 yellow LED indicates the statuses of the ISYGLT BUS

LED Status	Significance
OFF	no bus signal detected
ON	bus signal detected own address is not recognised
Steady flashing	bus signal and own module address detected

• 2 green LED (D1 and D2) signalise the cases of operation of both outputs (LD1 and LD2)

LED status	Significance
OFF	Output „OFF“ no failure
ON	Output „ON“ no failure
Steady flashing	Overcurrent
2x flasing	Overvoltage
3x flashing	Load training mode active

Connections

• 1 voltage connection 230V 45-65Hz
• 2 outputs 0-230V max. each 500W/VA
• 2 emergency operation inputs
• 2 Slave data connectors
• 1 connection for the subnet (BUS A and B, RS-485)

Design

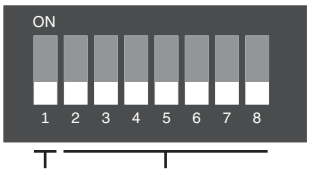
• Light grey plastic, can be snapped onto 35 mm DIN rail mounting 6 separating units

DIP switches

• S1 no function (place on „OFF“)
• S2 to S8 modul address ISYGLT

BUS operation ISYGLT-BUS

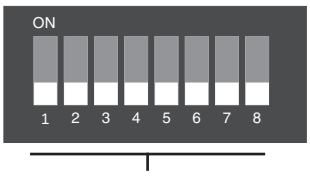
DIP switch above. Example address 0



OFF address 0 to 127

	OFF	DIP above	ON
OFF	OFF	1	
Address 0	OFF	2	
	OFF	3	
	OFF	4	
	OFF	5	
	OFF	6	
	OFF	7	
	OFF	8	

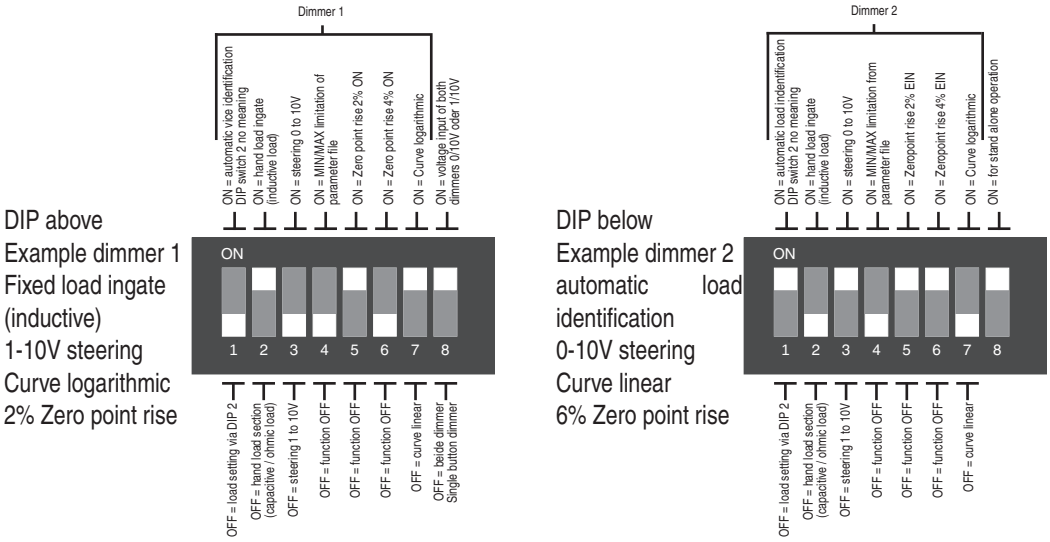
DIP switch below



All DIP switches OFF or not equiped

	OFF	DIP below	ON
All DIP switches OFF	OFF	1	
or not equiped	OFF	2	
	OFF	3	
	OFF	4	
	OFF	5	
	OFF	6	
	OFF	7	
	OFF	8	

Stand alone 2 single circuit dimmer

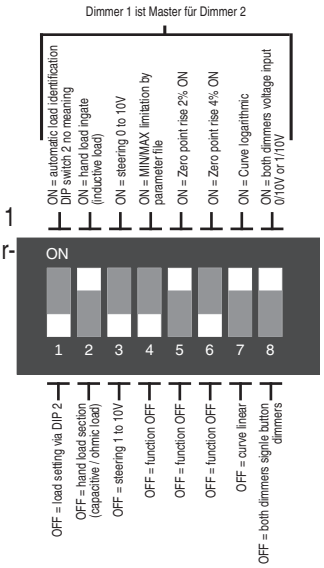


	OFF	DIP above	ON
Function setting for dimmer channel 1	load type attitude via DIP switch 2	1	automatic load identification (DIP-2 has no meaning)
	load type section (capacitive / ohmic load)	2	load type ingate (inductive / ohmic load)
	steering 1-10V	3	steering 0-10V
	function OFF	4	Min/Max limitation from parameter file
	function OFF	5	zero point rise 2% ON
	function OFF	6	zero point rise 4% ON
	curve linear	7	curve logarithmic
Both dimmer channels	both dimmer single button dimmer	8	both dimmer voltage input 0(1)-10V

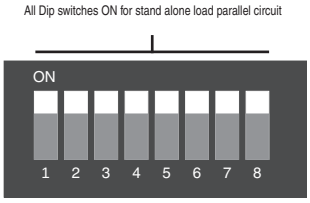
	OFF	DIP below	ON
Function setting for dimmer channel 2	load type attitude via DIP switch 2	1	automatic load identification (DIP-2 has no meaning)
	load type section (capacitive / ohmic load)	2	load type ingate (inductive / ohmic load)
	steering 1-10V	3	steering 0-10V
	function OFF	4	Min/Max limitation from parameter file
	function OFF	5	zero point rise 2% ON
	function OFF	6	zero point rise 4% ON
	curve linear	7	curve logarithmic
Both dimmer channels	BUS operation	8	Stand alone (Standard) operation

Standalone load parallel connection 1.000W per dimmer

DIP above
Example dimmer 1 and 2 (parallel circuit)
Fixed load ingate (inductive)
1-10V steering
Curve logarithmic
2% zero point rise



DIP below



	OFF	DIP above	ON
Function setting for dimmer channel 1	load type setting via DIP switch 2	1	automatic load identification (DIP-2 has no meaning)
	load type section (capacitive / ohmic load)	2	load type ingate (inductive / ohmic load)
	steering 1-10V	3	steering 0-10V
Dimmer channel 1 is the master for channel 2	function OFF	4	Min/Max limitation by parameter file
	funktion OFF	5	Zero point rise 2% ON
	function OFF	6	Zero point rise 4% ON
	curve linear	7	curve logarithmic
	both dimmers single button dimmer	8	both dimmers voltage input 0(1)-10V

OFF	DIP below	ON
All DIP switches at ON	1	ON
for load parallel circuit	2	ON
in the stand alone mode	3	ON
	4	ON
	5	ON
	6	ON
	7	ON
	8	ON

Parameterisation
The ISYGLT Programm-Designer offers various parameterisation options.

- Parallel circuit of the outputs of 2x 500W/VA to 1x 1000W/VA
- Setting of the dimm curves
- Minimum and Maximum values
- Determines the switching on behaviour
- Feedback of the dimmer status (diagnostic messages)
- Emergency operation at BUS failure
- Phase ingate / section
- Frequency 45-65 Hz

The following table contains detailed information about these options:

Please note:
1. column = parameter tab
2. column = setting (function)
3. column = description of the parameter to be set
4. column = possible setting (default values) are ***bold italics***

Tab	Setting	Parameter	Value
Basic setting	general functions	channel 1 is the master of channel 2	jes ***no***
		net frequency	***50/60Hz ripped auto*** 45-65Hz in 1 Hz steps
		max. frequency deviation	1-10Hz in 1 Hz steps ***(2Hz)***
	channel 1	dimmer load	***capacitive -> section*** inductive -> ingate
		minimum value	***0***-100%
		maximum value	0-***100%***
		dimmer value	***linear*** logarithmic quadratic bulbs lin (section) bulbs log (section) bulbs quadr (section) HVH lin (section) HVH log (section) HVH quadr (section) NVH lin (section) NVH log (section) NVH quadr (section) NVH lin (ingate) NVH log (ingate) NVH quadr (ingate) VIP90 lin (ingate) VIP90 log (ingate) VIP90 quadr (ingate) User curve

Tab	Setting	Parameter		Value
	channel 2	same as channel 1		
Special	diagnostic message	feedback (AEx.8)		temp controller (°C) temp transistor (°C) net frequency (Hz) voltage fluctuations ***cos Phi K1*** (0=0; 50=0,5; 100=1) cos Phi K2 (0=0; 50=0,5; 100=1) dimm value K1 (0-255) dimm value K2 (0-255) power K1 (0-255) power K2 (0-255) U input K1 (0-255) U input K2 (0-255) poti K1 (0-255) poti K2 (0-255)
	LOAD	VALUE	DIMM TYPE	
0	ohmic	tiny	ingate	
1	ohmic	medium	ingate	
2	ohmic	big	ingate	
3	ohmic	tiny	ingate	
4	ohmic	medium	ingate	
5	ohmic	big	ingate	
6	ohmic		ingate	
100	ohmic		section	load type K1 (see left
101	capacitive		section	table)
				load type K2 (see left table)
				cycle time ISYBUS (0-255msec)
				software version (101 for V1.01)
	channel 1	deactivate at value zero		inactive immediately ***according to blendtim***e
		U fluctuations deviation control		active ***non active***
		startup current limitation		little normal strong super extreme maximum
		switching off current limitation		active non active
		curve train after parameter transfer		active non active
	channel 2	same as channel 1		

Tab	Setting	Parameter	Value
dimm speed	channel 1	speed value speed value speed: The specified fade time always refers to the time from 0-100% e.g. 10s. Dimming always occurs at the same speed, which means that dimming from 50-100 only takes 5 seconds. This is the default setting which should always be set except for light sequence controls (multiscene). speed value time: speed value time means the specified fade time is always calculated absolutely. If 10s is specified the change from 0-100% will take 10s. The change from 90-100% also takes 10s. This should be used for light sequence control (multiscene).	***speed*** time
		dissolution of speed The dissolution of speed indicates the conversion of the fade time. Standard is 0,5s, a fade time of 0-120s makes possible. For fast expiries is a resolution of 0,1s available, that corresponds to a fade time of 0-24s.	1/10 sec. ***1/2 sec.*** 1 sec. 10 sec. 20 sec.
		linearization	***only on soft*** automatically
	channel 2	same as channel 1	
emergency operation	BUS	time - detection BUS failure Here the time is indicated in seconds for the recognition of a BUS failure This should be a little bit longer as the duration of programming setted in the master-module.	5 to 255 sec. ***(20s)***
	channel 1	action at BUS failure setting (per channel) what should happen after recognizing of a BUS failure	***no change*** 0% 20% 50% 80% 100% poti value U input
		poti active, when (only at type UD-500-M2/BP!!)	***never*** BUS value = 0% poti value > 0% poti value > BUS value speed value = #244 always

Tab	Setting	Parameter		Value
		U input active, when		***never*** BUS value = 0% UE value > 0% UE value > BUS value speed value = #244 always
		U input min.		***1,00*** - 10,00V
		U input max.		1,00 - ***10,00V***
	channel 2	same as channel 1		
User curve	channel 1	for dimming value #1	0,00% - 100,00%	***0,00%***
		for dimming value #25	0,00% - 100,00%	***9,80%***
		for dimming value #60	0,00% - 100,00%	***19,61%***
		for dimming value #75	0,00% - 100,00%	***29,41%***
		for dimming value #100	0,00% - 100,00%	***39,21%***
		for dimming value #125	0,00% - 100,00%	***49,02%***
		for dimming value #150	0,00% - 100,00%	***58,82%***
		for dimming value #175	0,00% - 100,00%	***68,63%***
		for dimming value #200	0,00% - 100,00%	***78,43%***
		for dimming value #225	0,00% - 100,00%	***88,24%***
		for dimming value #255	0,00% - 100,00%	***100,00%***
	channel 2	same as channel 1		

Technical data

Type	UD-500-M2	UD-500-M2/BP
Art. No.	80026500	80026501
Power supply	230V / 45 to 65 Hz	
Fuse protection	1x 230V automat or GL-fuse max. 10A	
Output	2x 230V short circuit proof (section 15-500W, ingate 35-500W)	
Power dissipation	3 ... 13W (stand-by ... full load)	
Isulation voltage	3500V (ISYGLT-BUS / net)	
Safety	EN 60669-T1+2 (IEC 60669-T1+2)	
RFI	EN 55015, EN 50082-T1, EN 55103-T2	
Temperature rise protection Short-circuit protection	Temperature protection (bimetal) 105 °C even resetting, primary circui of the dimmer (Power capacity 10A at cos phi=1; 6,3A at cos phi=0,6) Electronical overload assurance by current measurement Short circuit power cut within 10 milliseconds	
Subnet (RS-485)	max. 5,6V limited by Z-diodes	
Dimensions	BxHxT 106x90x59mm (6TE)	
Weight	300g	
Connection	Screw terminals pluggable	

UD-500-M2/B(P)	Continued
Operating temperature	-10...+45°C -> at +50°C max. 60% connectable power -> at +55°C max. 50% connectable power -> at +60°C max. 30% connectable power
Storage temperature	-25...+70°C
Humidity	0 ...85% r.F. non condensing
Protection grade	IP30
Protection class	I
ESD immunity	Category 3 according to IEC1000-4-2
EMV immunity	Use in typical industrial enviroment. Category 3 according to IEC-1000-4-4 (Test was carried out within a whole system)
CE sign	yes

The parameters are transferred over the BUS to the modules and stored in the module durably.

Terminal assignment

• 9-pole connector (left)

Terminal	Internal connections	Signification
GND		Reference potential (Ground) for the voltage inputs (0-10V) and BUS RS485
UE1		Gate voltage input for the dimmer output LD1 (emergency function)
UE2		Gate voltage input for the dimmer output LD2 (emergency function)
SL1 -		Control output for the load sense dimmer LD1
SL2 -		Control output for the load sense dimmer LD2
SLC +		Common control input for load sense dimmer LD1 und LD2
GND		Reference potential (Ground) for the voltage inputs (0-10V) and BUS RS485
A		ISYGLT-Subnet-Bus RS485
B		ISYGLT-Subnet-Bus RS485

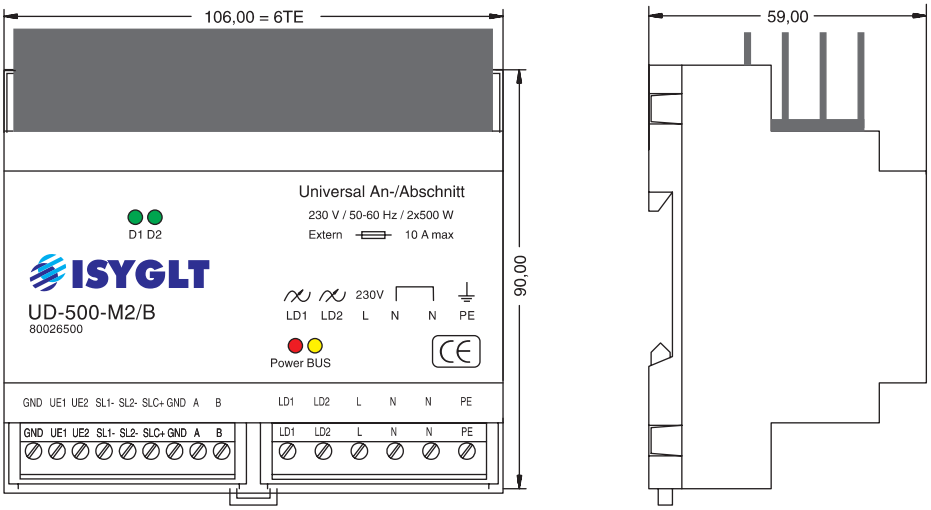
Draught for connection of slaves

Terminal assignment Continued

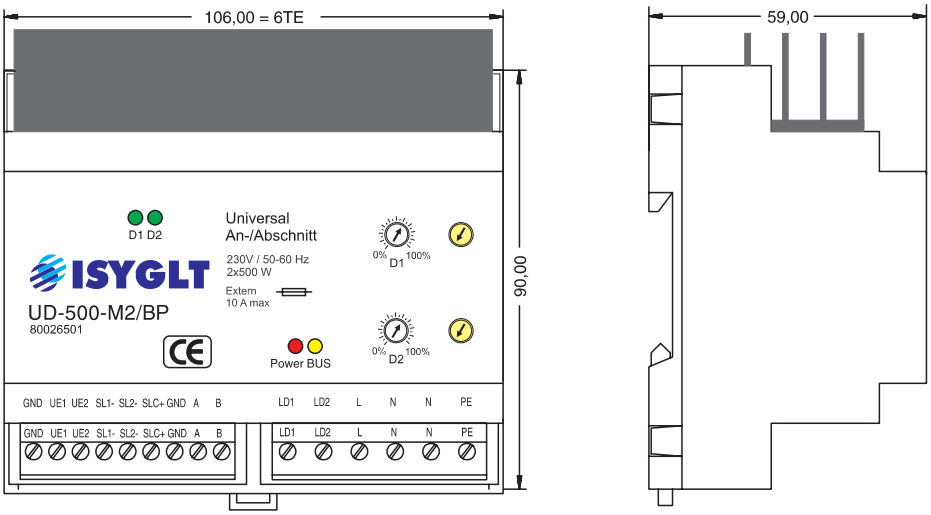
• 6-pole connector (right)

Terminal	Internal connections	Signification
LD1		Dimmer 1 load output 0...230V max. 500W/VA ingate / section
LD2		Dimmer 2 load output 0...230V max. 500W/VA ingate / section
L		Mains voltage 230V (45Hz-65Hz)
N	●	Neutral conductor
N	●	Neutral conductor
PE		Protective conductor

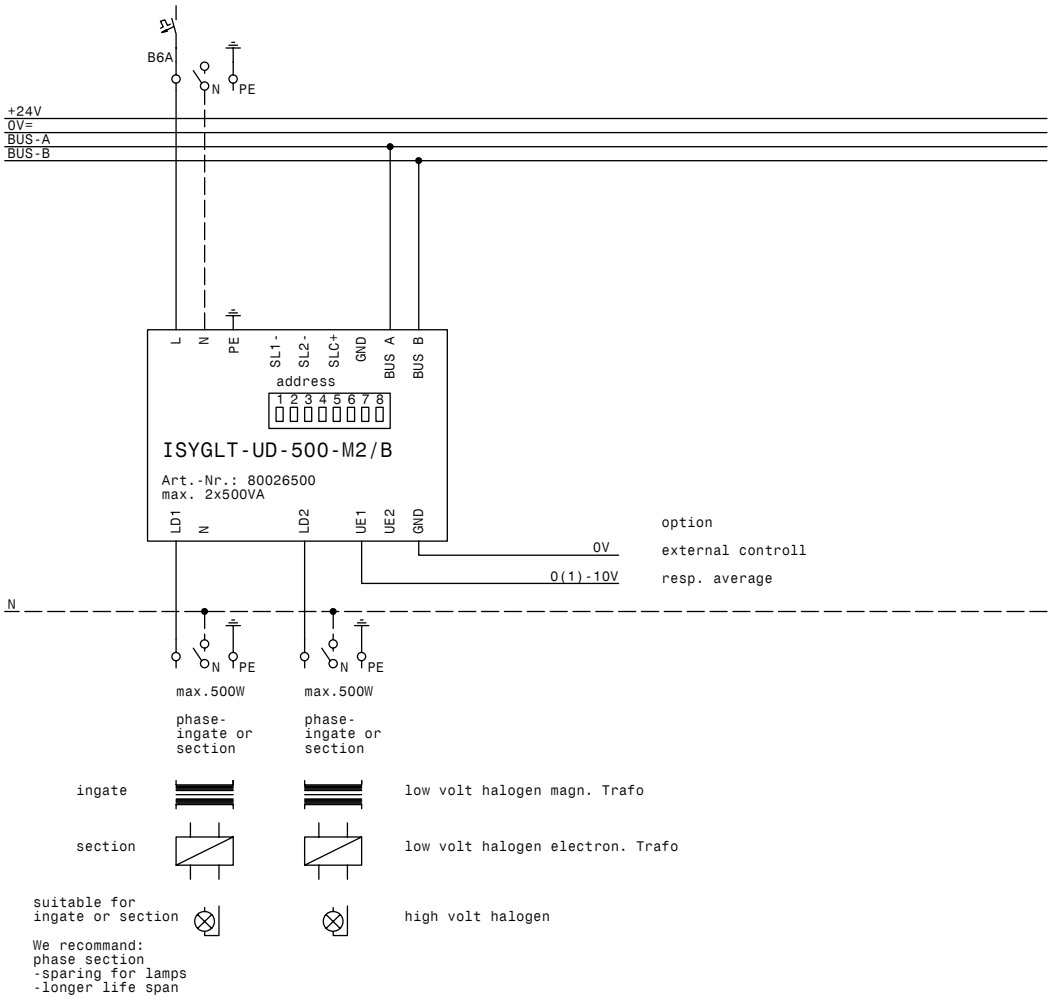
View UD-500-M2/B



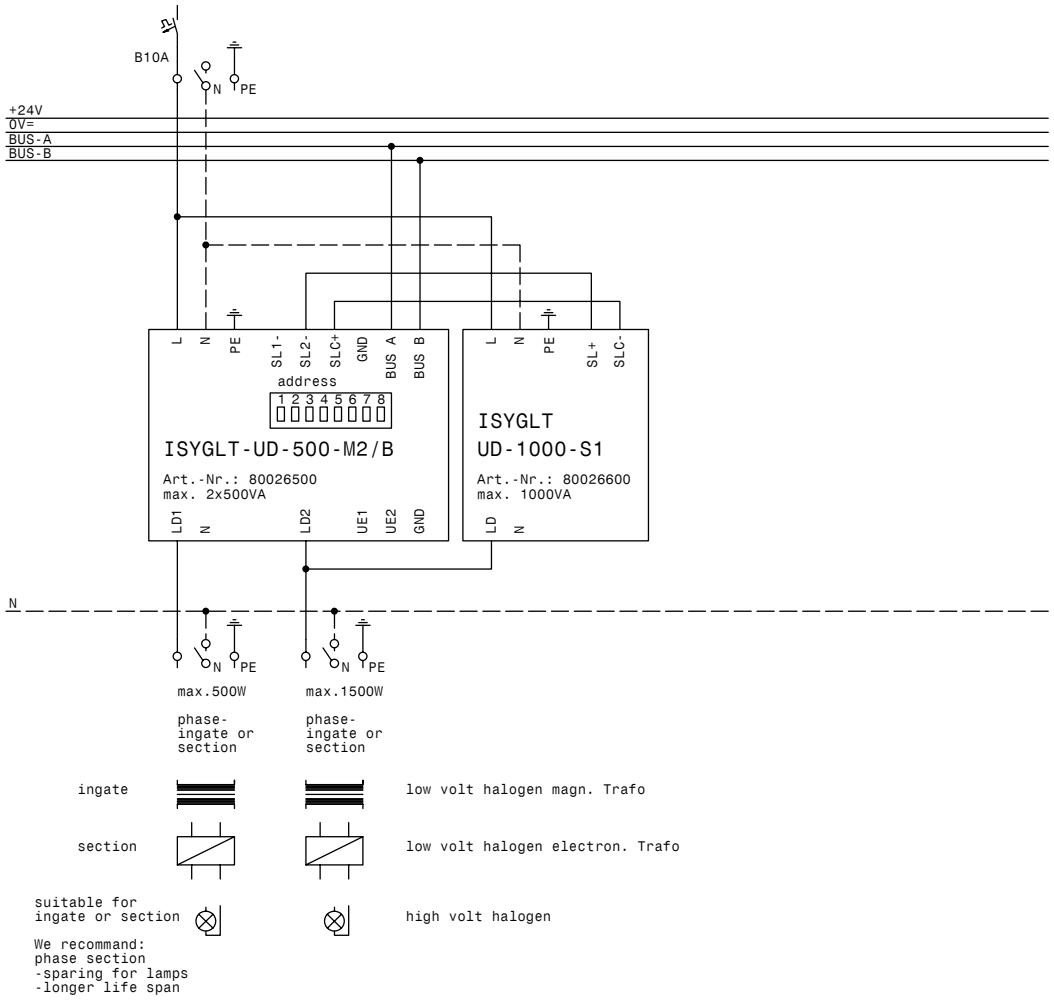
View UD-500-M2/BP

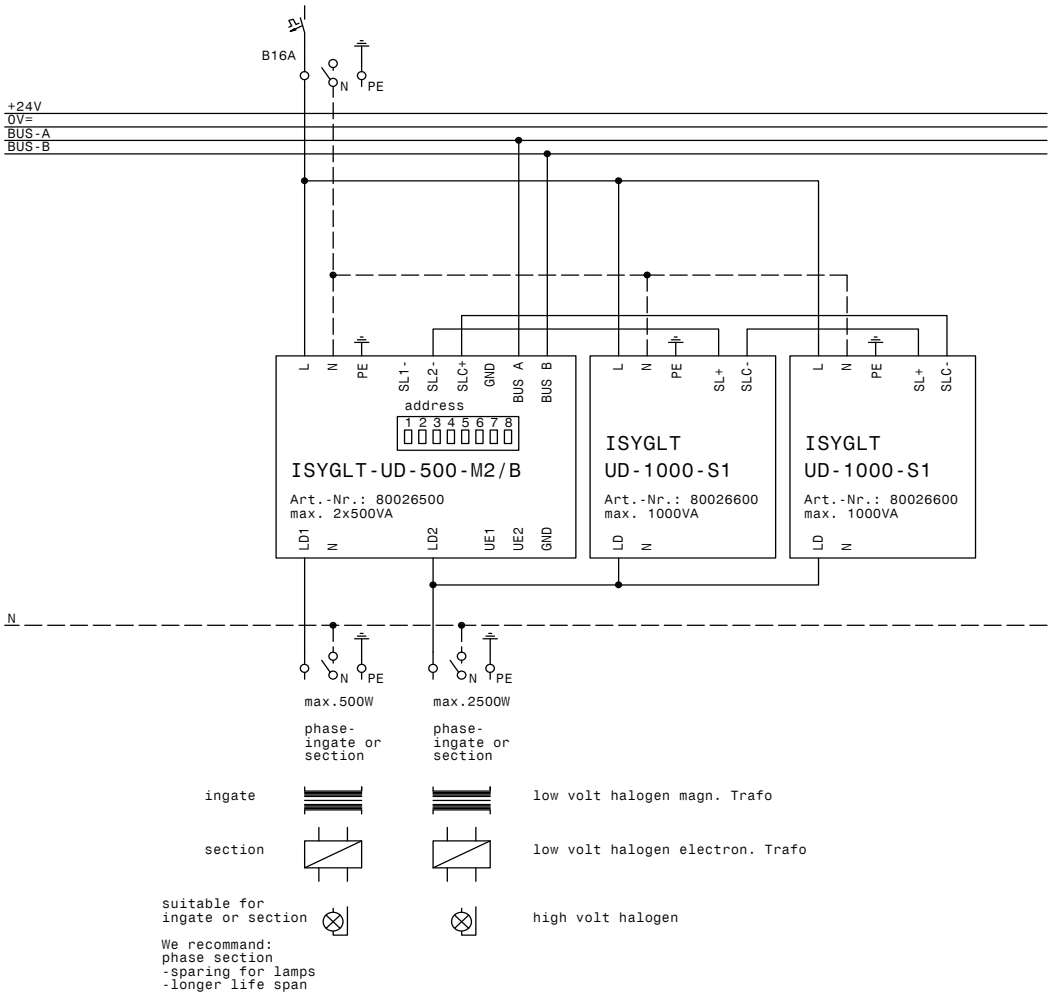


Wiring diagram - variant 1



Wiring diagram - variant 2



Wiring diagram - variant 3

(1x UD-500-M2/B with 2x UD-1000-S1, corresponds to 1x500W and 1x 2500W)