BLACKY

the professional projection shutter for theater, concert, stage and multimedia performance

Operating Manual

Production and distribution:

GAD
Elektronik-Komponenten-Vertrieb

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1) BLACKY / Supplied Parts

a) Controller and Drive Mechanism

The basic mechanism is comprised of a controller, a drive mechanism with a shaft with shutter attachment, DMX512/2000 input and output (XLR 5-pole male/female) jacks, a power supply input jack and a 12-pole dip switch for DMX addressing and pivot angle adjustment.
BLACKY is compatible to the standard DMX 512-1990 protocol as well as the next generation DMX 512-2000 and can be controlled by any DMX light mixer or computer and can also be controlled with the optional remote control. The remote control unit includes an adapter which can be extended with any normal microphone cable (XLR 3 pin). The power supply unit adapts to any 110-230V input.
The basic Blacky model comes with a 5-pole XLR input jack for DMX 512/2000 but can be adapted down to 3-pole XLR for DMX 512/1990.
Use only the original power supply!

b) **Shutters and Accessories**

In addition to the basic device the following accessories are included:
-1 power supply 5V DC / 1A
 Euro-connector plug / ROW adapter
-1 shutter for lenses up to 100 mm ø
-1 shutter for lenses up to 160 mm ø
-1 shutter holder L = 60 mm
-2 knurled screws
-1 washer
-1 tension belt
-1 metal case
-1 Operations Manual
-1 Quick Reference Guide

c) **Remote Control** (optional)

The remote control includes a special 3m adapter cable (XLR 5-pole female>XLR 3-pole male) and a LED pushbutton hand controller. The remote cable can be extended with any normal microphone cable (XLR 3 pin (max. 200 m.).
No DMX signal is necessary with the remote control and in this case the DMX-Out jack should not be used.

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2) <u>Adjustment and Assembly</u>

a) <u>Basic Setup</u>

Dip switch factory presets:

Switches 1 to 9: DMX-Address: Address 001
Switch 10: factory maintenance setting: standard OFF
Switches 11,12: Pivot angle position: 180°

This is the standard position mode for a use with a DMX system (channel 001) or with the remote control. In the appendix of this manual you will find a DMX table with all possible DMX addresses. **Any changes to the DMX address becomes effective only after a full reset of separating the Blacky from the power supply and plugging it back in.**
The factory preset of Switch 10 is the OFF position. This switch serves as a maintenance reference for the manufacturer and deactivates the device when turned to the ON position.

b) <u>Adjusting the pivoting angle</u>

With switches 11 and 12 you can vary the pivoting angle - see the table:

S1	180°	135°	90°	60°
11	on	on	off	off
12	on	off	on	off

c) <u>Remote and DMX Connections</u>

DMX-IN: this jack is the input for both the DMX connection and the remote control. This device can only be operated by either DMX or remote control.

DMX-OUT: an output for extending the DMX chain to other devices. If this is the last device in the chain then an appropriate terminator should be used.

BLACKY can be used with a DMX 512/2000 system (uplink only) as well as a DMX 512/1990 system with the appropriate adapter, (XLR 5-pole>XLR-3-pole), without changing the setup.

d) <u>DMX 512/2000 downlink</u>

In order to avoid any interference when using a DMX 512/2000 system with a downlink function, jumper 1 and 2 **inside the device** must be changed to Position 2-3.
It is impossible, however, to use the remote control with this jumper position!

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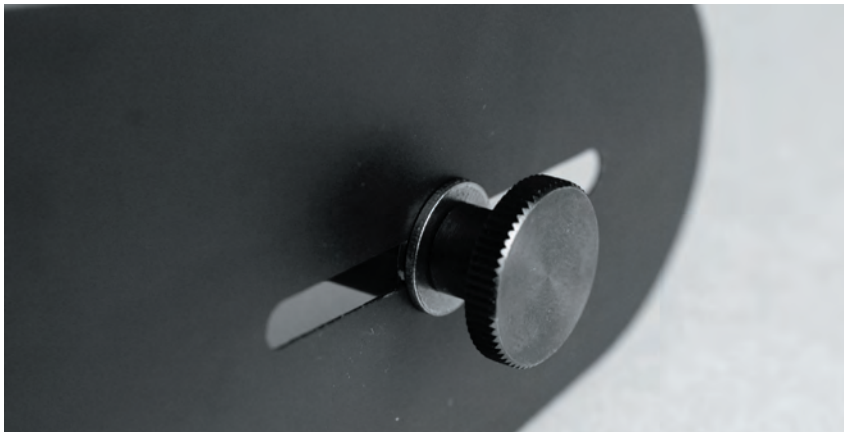
e) Installation on a Projector

BLACKY can be placed in practically any conceivable position in front of the projector lens. The standard position is strapped on top of the projector with the included tension belt. When hanging the projector, BLACKY can also be strapped underneath. Take care to pull the tension belt through the handles and use a safety cable to help prevent accidents.

f) Shutter Installation

Make sure that the DMX channel is OFF or that the LED on the remote control is out and not red, indicating that the unit is closed. Make sure at this time that neither the DMX channel nor the remote control switch is inadvertently activated.
Now mount the shutter on the shaft with a spacing of ca. 15-20 mm in front of the projector lens. It is important to note that there should be no interference or obstruction to the shaft.
On the front side of the shaft is a countersink which fits exactly in the slot of the shutter plate!
Place the washer inside the knurled screw to prevent any slippage.

3) Safety Precautions

When used with a hanging projector a safety cable should be attached through BLACKY's handle. Installation should only be undertaken when the device is disconnected to the power supply. To avoid injury take care that no one obstructs the shutter during operation.

BLACKY may only be used with lighting devices that are fan-cooled. Using it with hot lights, etc. is potentially dangerous and is a possible fire hazard.

It is important during installation to ensure that the shutter has ample space to open and close properly. Hinderances to the shutter could cause damage to BLACKY or surrounding structures.

Damages due to false installation and other negligence on the part of the customer are not covered by the warranty.

4) Technical Specifications

Operating Voltage:	5V
Current:	max. 700mA
Apex Angles:	60°/ 90°/ 135°/ 180°
Torque:	28 N/cm
Shutter Size:	A: L 220 mm, Ø 100 mm
	B: L 280 mm, Ø 160 mm
	C: L175 mm, Ø 100 mm
	D: L 300 mm, Ø 200 mm
Shutter Holder:	Standard: L: 60 mm
	Extra Long: L: 110 mm
Control:	DMX512/2000 / DMX512/1990 / Remote Control
Connectors:	XLR 5-pole male, XLR 5-pole female
Power Supply:	110-230 V automatic, polarity safe
	Power Supply Plug is fastened to device via a coupling nut
Addressing:	12 Dip-Switches
Dimensions without Shutter:	L 190 x W 105 x H 80 mm
Case Dimensions:	L 124 x W 105 x H 51 mm
Weight:	ca. 0,8 kg
Shutter Reaction Time:	0,5-0,7 sec

5) Warranty, Guaranty, Service:

Warranty, Guaranty: 2 years.

Damage due to improper installation and operation are not covered by this warranty.

For any service questions contact: **service@theBLACKY.net .**

6) BLACKY and Accessories

Standard Device (Supplied Items):

Standard Shutter Holder, L 60 mm
Shutter A, L 220 mm, Ø 100 mm
Shutter B, L 280 mm, Ø 160 mm
Power Supply 5V 1A DC
Tension Belt
Metal Case

Optional Accessories:

Shutter Holder, long 110 mm
Shutter C (Mini), L 175 mm, Ø 100 mm
Shutter D (Maxi), L 300 mm, Ø 200 mm
Special Shutter sizes available by request.
DMX Adapter 5>3 pole. male/ female and female/male
Remote Control with adapter cable 3m (extendable with XLR-Standard microphone cable.)

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7) DMX Address Table

Any changes to the DMX become effective only after a full reset of separating the Blacky from the power supply and plugging it back in.

The following table shows the switching positions for dip switch 1-9 for adjusting the 511 possible addresses. (Example: DMX address 263 = 111000001)

					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0			32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0		1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0		2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0		3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0		4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0		5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0		6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0		7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0		8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0		9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0		10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0		11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0		12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0		13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0		14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0		15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1		16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1		17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1		18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1		19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1		20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1		21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1		22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1		23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1		24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1		25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1		26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1		27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1		28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1		29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511