

PRODUCT USER GUIDE

Unidrive CC9 Driver



Rev: C2



PLEASE READ THIS USER GUIDE BEFORE INSTALLING, OPERATING
OR PERFORMING MAINTENANCE ON THE DRIVER UNIT



Thank you for purchasing this low voltage UFO Constant Current Driver.

The CC9 is a compact 350mA output constant current multi-function driver designed to drive UFO constant current LED fittings up to 16W. Constant voltage LEDs cannot be connected to this driver. Please refer to the specific section within this manual for wiring/connection guidance.

WARNING

This driver is designed to work with constant current LED fittings operating on a 350mA output . Connecting this driver to any other LED devices may result in catastrophic failure of the LED device and/or the CC9 driver. Always check the input current and voltage of the LED devices to ensure compatibility prior to powering up the system.

Never hot swap LED fittings. When adding or removing LED fittings always power down the system first.

WARNING

This driver is designed to work on a DC input voltage of 12-48V ONLY. The DC PSU supplying this driver must have an output capability sufficient to power up the driver and maintain the output load.

This CC9 driver is suitable for indoor/dry areas and must not be installed in damp or wet conditions.

IMPORTANT

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT, ITS COMPONENT PARTS AND THE HAZARDS INVOLVED.

ELECTRICAL WIRING AND CONNECTION MUST BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON OBSERVING ALL LOCAL AND STATUTORY ELECTRICAL AND SAFETY REGULATIONS.

OUTPUT CAPACITY

The UFO Unidrive CC9 driver supplies a constant current of 350mA at output voltages between 3.2 and 48V. All UFO LED Fittings are 350mA constant current devices. These LED Fittings have a maximum voltage of 3.2V DC and provide a 1.1 Watt output.

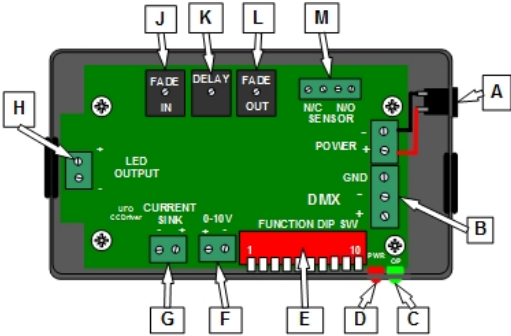
The UFO Unidrive CC9 driver has a low voltage DC input. Therefore the PSU used to supply the CC9 is selected based upon the total number of fittings the CC9 will be driving.

Number of LED fittings	Max Volts DC	Total Watts DC	Standard UFO UK PSU	Standard UFO EU PSU
1	3.2	1.1	700482 12V 2A 24W PSU UK	700481 12V 2A 24W PSU EU
2	6.4	2.2	700482 12V 2A 24W PSU UK	700481 12V 2A 24W PSU EU
3	9.6	3.3	700482 12V 2A 24W PSU UK	700481 12V 2A 24W PSU EU
4	12.8	4.4	700111 24V 0.75A 18W PSU	700111 24V 0.75A 18W PSU
5	16	5.5	700111 24V 0.75A 18W PSU	700111 24V 0.75A 18W PSU
6	19.2	6.6	700111 24V 0.75A 18W PSU	700111 24V 0.75A 18W PSU
7	22.4	7.7	700111 24V 0.75A 18W PSU	700111 24V 0.75A 18W PSU
8	25.6	8.8	700485 36V 1.66A PSU	700485 36V 1.66A PSU
9	28.8	9.9	700485 36V 1.66A PSU	700485 36V 1.66A PSU
10	32	11	700485 36V 1.66A PSU	700485 36V 1.66A PSU
11	35.2	12.1	700485 36V 1.66A PSU	700485 36V 1.66A PSU
12	38.4	13.2	Special Order	Special Order
13	41.6	14.3	Special Order	Special Order
14	45.5	15.4	Special Order	Special Order

WARNING

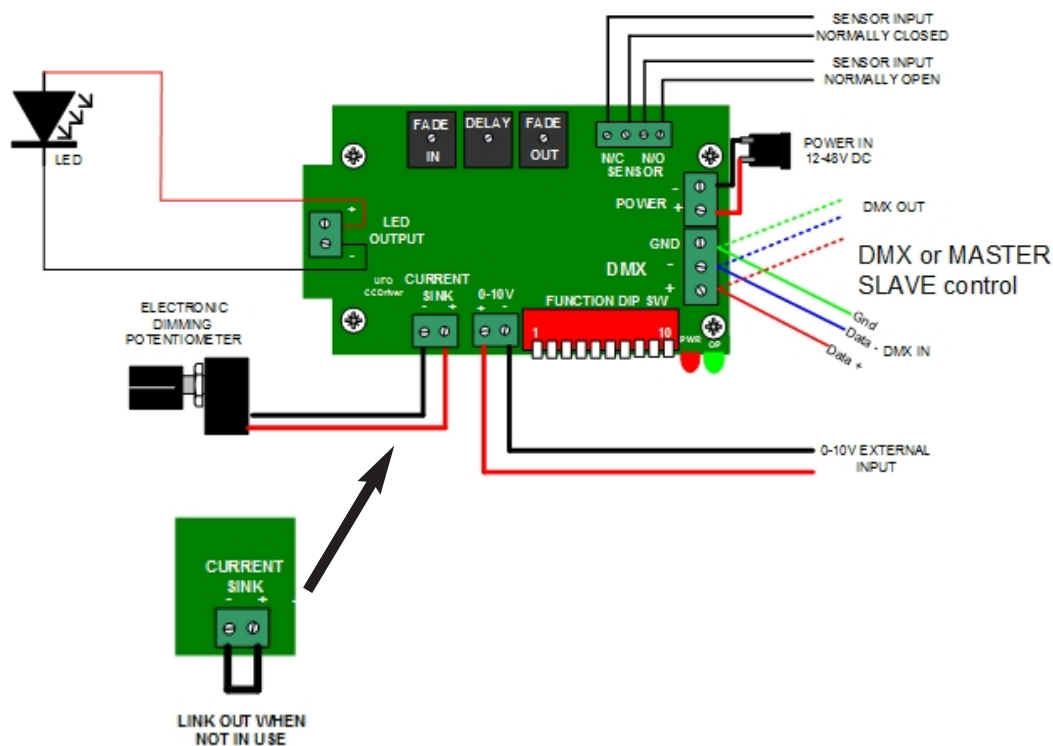
Connecting too many constant current LED fittings to the CC9 driver with excessive maximum voltage output or using an underrated PSU will result in the driver shutting down.

Always check the maximum output voltage of the fittings and ensure that based on 3.2v per LED an adequate number of fittings are connected, and a suitable rated input PSU for the CC9 driver is selected, prior to powering up the system.



Device	Function
A	Power input jack socket (2.5mm centre positive). DC input voltage 12V to 48V dependent on number of LED fittings connected
B	DMX input/output screw terminals. Data positive, data negative and ground. Occupies two DMX channels – Channel 1 - LED dimming, Channel 2 LED ON/OFF. Use for DMX control or Master Slave link to other CC9 drivers
C	Function LED – indicates signal and control presence
D	Power and fault LED – indicates power input and overcurrent, short circuit and over temperature faults (flashing)
E	Function DIP switch – sets different functions (manual, DMX, sensor input etc.) and also addressing for DMX. Switch down for ON up for OFF
F	0-10V input screw terminals. Positive and negative current source (external receiving voltage) 0-10V dimming voltage input (0 to 100%)
G	Manual (current sink) dimming screw terminals – 10V on screw terminals adjusted by external electronic potentiometer. Normally linked out when not in use
H	Constant current screw terminal output LED + and common ground
J	FADE IN potentiometer. Adjusts the fade in time for sensor operation between 1 and 12 seconds
K	DELAY potentiometer. Adjusts the on time for sensor operation (between fade in and fade out) from 1 sec to approximately 5 minutes
L	FADE OUT potentiometer. Adjusts the fade out time for sensor operation between 1 and 12 seconds
M	Sensor input – one normally open (N/O – goes open circuit to trigger FADE IN) one normally closed (N/C – goes closed circuit to trigger FADE IN)

TYPICAL WIRING CONNECTIONS



IMPORTANT

Connect ALL LEDs, electrical control and output wiring connections for the complete system BEFORE setting up the driver and connecting the driver PSU to the mains supply – see drawing above and set up instructions below.

Never hot swap LED fittings. When adding or removing LED fittings always power down the system first.

ALWAYS carry out **ALL** wiring connections and set up stages prior to connecting power to the driver.

NO DIMMING OPERATION

For no dimming operation, all of the manual and remote controls are disabled.

EITHER



OR



MANUAL DIMMING OPERATION (CURRENT SINK)

For manual dimming using an electronic potentiometer, the current sink screw terminal link must first be removed – and a potentiometer connected, in its place. Only compatible electronic potentiometers recommended by UFO are to be used.



0-10V DIMMING - CURRENT SOURCE

0-10V dimming (current source) requires an external varying 0 to 10V DC control voltage. The control voltage will dim both LED outputs simultaneously. See 0-10V value table on following pages.



DMX DIMMING AND CONTROL



NOTES:

The CC9 driver occupies two DMX channels – see DMX Channel Table on page 8.

For guidance on DMX address switch settings see DMX Address Table on page 8.

MASTER CONTROL



SLAVE CONTROL



SENSOR INPUT

Sensor input may either be Normally Open (N/O) or Normally Closed operation. For N/O operation the sensor must go open circuit to operate the driver. For N/C operation the sensor must go closed circuit to operate the driver.

The sensor circuit has three timers FADE IN, DELAY & FADE OUT. These timers are adjusted by trimmer potentiometers (J, K & L), see sensor table on page 8.

NORMALLY OPEN



NORMALLY CLOSED



NOTE:

Where a movement sensor is used to trigger the input, the DELAY and FADE OUT timers will not run to completion until all movement has ceased.

DMX CHANNEL TABLE

Channel No.	Function	Value
01	LED Output Dimming	0-255 - No light to maximum light ouput
02	LED Output On	0-250
02	LED Output Off	251-255

0-10V CHANNEL TABLE

Value -DC Volts	Description
0 - 0.47	LED Output Off
0.48	LED Output Minimum Illumination
10	LED Output Maximum Illumination

SENSOR TABLE

Trimmer	Range (approx.)	Description
Fade In	1 - 10 seconds	On sensor operation, fades in LED output from zero to maximum light
Delay	1 - 300 seconds	Maintains LED output at maximum light
Fade Out	1 - 10 seconds	After delay, timer fades out LED output from maximum to zero light

NOTE:

The trimmer potentiometers are set for minimum (seconds) at full counter clockwise rotation, maximum seconds) at full clockwise rotation.

DMX ADDRESS TABLE

Switches S6 to S9

DIP Switch Setting																		
0=Off																		
1=On																		
Switches S1-S5																		
S1	S2	S3	S4	S5	S9	0	0	0	0	0	0	0	0	1	1	1	1	1
					S8	0	0	0	0	1	1	1	1	0	0	0	0	1
					S7	0	0	1	1	0	0	1	1	0	0	1	0	1
					S6	0	1	0	1	0	1	0	1	0	1	0	1	0
0	0	0	0	0	0	32	64	96	128	160	192	224	256	288	320	352	384	416
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447

Switches S1 to S5

DMX Address

Problem	Probable Causes	Remedy
[GENERAL] System is dead - power LED (D) not lit No light output from LED	Mains supply off	Check supply and reinstate
	Loose mains plugs	Check plugs
	Loose DC output wire or connection	Check all connections
	PSU failed - check output with DVM	Replace PSU
	Driver PCB failure	Replace driver
[GENERAL] One output channel is dead Power LED (D) is lit	Loose output wire to dead channel or faulty/poorly fitting power in on extrusion. Check output with DVM	Check all connections
	Driver PCB failure	Replace driver
[NO DIMMING MODE] System is dead - power LED (D) lit No light output	Current sink input link in place - DIP switch 10 on	Switch 10 off or remove link
	Loose output GND wire or poorly fitting power in on extrusion	Check all connections
	PSU failed - check output with DVM	Replace PSU
	Driver PCB failure	Replace driver
[MANUAL DIMMING MODE] Power LED (D) lit – function LED (C) not lit – output LED devices illuminated but not dimming	Switch 10 off	Switch 10 to on
	Electronic potentiometers wired incorrectly - wrong polarity	Check polarity of connections and reconnect correctly.
[0-10V DIMMING MODE] Power LED (D) lit - function LED (C) not lit. Output LED devices illuminated but not dimming	Switch 10 is off	Switch 10 to on
[0-10V DIMMING MODE] Power LED (D) lit - function LED (C) not lit. Output LED devices not illuminated	0-10V wired incorrectly - wrong polarity	Check polarity of connections and reconnect correctly
	0-10V control signal missing check input with DVM	Check all connections and output of 0-10v controller using DVM
[0-10V DIMMING MODE] Power LED (D) lit - function LED (C) lit. Output LED devices illuminated but flickering	0V from 0-10V control signal is missing	Check all connections and output of 0-10V controller using DVM

TROUBLESHOOTING

Problem	Probable Causes	Remedy
[DMX DIMMING MODE] Power LED (D) lit - function LED (C) lit. Output LED devices illuminated but responding to DMX	DMX address not set on DIP switches 1-9	Set DMX address
[DMX DIMMING MODE] Power LED (D) lit - function LED (C) lit. Output LED devices not illuminated and not responding to DMX	Switch 10 is on	Switch 10 off
	Incorrect DMX address set	Set correct DMX address
[DMX DIMMING MODE] Power LED (D) lit - function LED (C) not lit. Output LED devices illuminated but not responding to DMX	DMX control signal missing	Check all connections are secure and correct polarity and confirm output of DMX controller and/or previous DMX device in DMX chain
[SLAVE MODE] Power LED (D) lit - function LED (C) not lit. Output LED devices illuminated but not responding to master control	Master driver not set up correctly	Check master driver set up
	DMX control signal from master driver missing	Check all connections are secure and correct polarity and confirm output of master driver and/or previous devices in master / slave DMX chain
[N/O or N/C SENSOR OPERATION] Power LED (D) lit - function LED (C) not lit. Output LED devices illuminated but not responding to sensor	Switch 10 is off	Switch 10 to on
[N/O SENSOR OPERATION] Power LED (D) lit - function LED (C) not lit. Output LED devices not illuminated and not responding to sensor	Switch 1 is off	Switch 1 to on
	Current sink input link in place	Remove link
[N/C SENSOR OPERATION] Power LED (D) lit - function LED (C) not lit. Output LED devices not illuminated and not responding to sensor	Switch 2 is off	Switch 2 to on
	Current sink input link in place	Remove link
[N/O or N/C SENSOR OPERATION] Power LED (D) lit - function LED (C) not lit. Output LED devices not illuminated and not responding to sensor	Sensor control signal is missing	Check all connections and output of sensor using DVM
	Sensor wired to wrong input	Check input connections and rewire

Problem	Probable Causes	Remedy
[SHORT CIRCUIT] Output LED devices go out and power LED (D) flashes rapidly	Short circuit between LED output and GND	Check for short circuit on output cables using a DVM. Repair or replace faulty cables or devices.
[OVER CURRENT] Heavily loaded system - Output LED devices go out momentarily and power LED (D) flashes rapidly	System overloaded beyond 30W	Reduce load by removing some LED fittings until a safe working load of not more than 30W is achieved
[OVER TEMPERATURE] Output LED devices go out momentarily and power LED (D) flashes rapidly	Driver ambient temperature too hot	Re-site driver to cooler ambient environment

TECHNICAL SPECIFICATIONS

Product Name	UFO Unidrive CC9
UFO Product Code	DR-CC-48-16-D-CU - driver with single integral dimming potentiometer DR-CC-DC-48-16-ALL-CU - driver with fully functional manual / dmx / 0-10V / sensor control
Description	16W fully functional dimmable constant current driver
Input Power	12-48V DC
Rated Power	16W maximum output
Output Current	350mA
Connection	Power - 2.1mm input jack plug / Control & Outputs - screw terminals
Protection	SCP / OCP / OTP
Functionality	- Individual manual (current sink) dimming with electronic potentiometer - 0-10V (current source) output dimming - DMX with 2 channels (LED dimming & on/off). Controllable from DMX system or can operate standalone master/slave with other CC9 drivers. - 2 channels (N/O & N/C) sensor input to trigger output LED devices with fade in, delay and fade out controls.
Ambient Temp.	Min. -20°C to Max. +45°C
IP Rating	IP20 for indoor use only
Dimensions	146mm (5.75") x 68mm (2.68") x 40mm (1.57")
Accessories	Unidim CVD3 (DM-ELEC-XX-XX-XX-D) - single electronic (current sink) potentiometer on mounting plate



DESIGN



SPECIFY



BUILD



INSTALL

United Kingdom • United States • Germany • Europe • UAE