LED
Microsensor NT

D-41
UNIVERSAL LED DRIVER
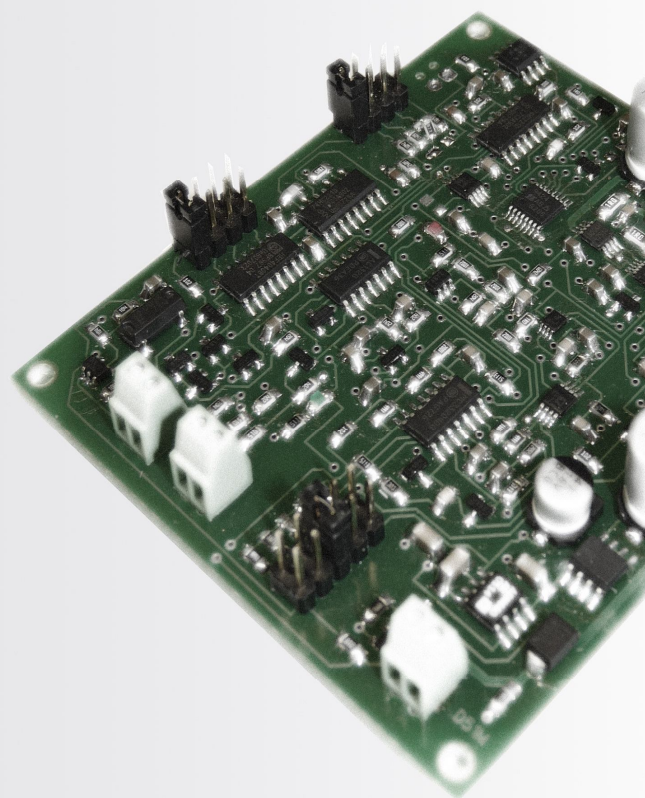# INSTRUCTION MANUAL

rev. 060912

Application

D-41M driver is designed for power supply of Mid-IR LEDs.

Features

- **Pulse mode operation** (mode that provides **maximum peak optical power**).
- **Adjustment** of LED current amplitude, frequency and pulse duration via driver's **jumpers**.
- **Synchronization input** terminal block which allows:
  - **synchronizing** driver with an external device (synchronous detector etc.);
  - **synchronizing** two or more drivers simultaneously;
  - **setting custom** frequency of the LED signal.
- Possibility of **synchronization** with an **external device** with the help of **synchronization output** terminal block.
- **Safety system** for prevention of LED damage in case of **circuit brake**.

Operation conditions

Indoor operation only. Ingress Protection Rating IP00.

- Do not switch jumpers during work.
- Do not turn on the driver without jumpers inserted.
- Do not use multimeter to control and adjust current.
- Please keep the following driver's regimes listed in the table below. Otherwise excessive load may cause overheating and LED damage.

Current, A		Frequency			
		512 Hz	2 kHz	8 kHz	16 kHz
Pulse duration, μs	2	2.0	2.0	1.6	1.2
	5	2.0	2.0	1.2	0.8
	10	2.0	1.6	0.8	0.4
	20	2.0	1.2	0.4	0.4

Maximum allowed current at different operation modes (frequency and pulse duration).

**Note!** Please refer to your provider if you have any questions.
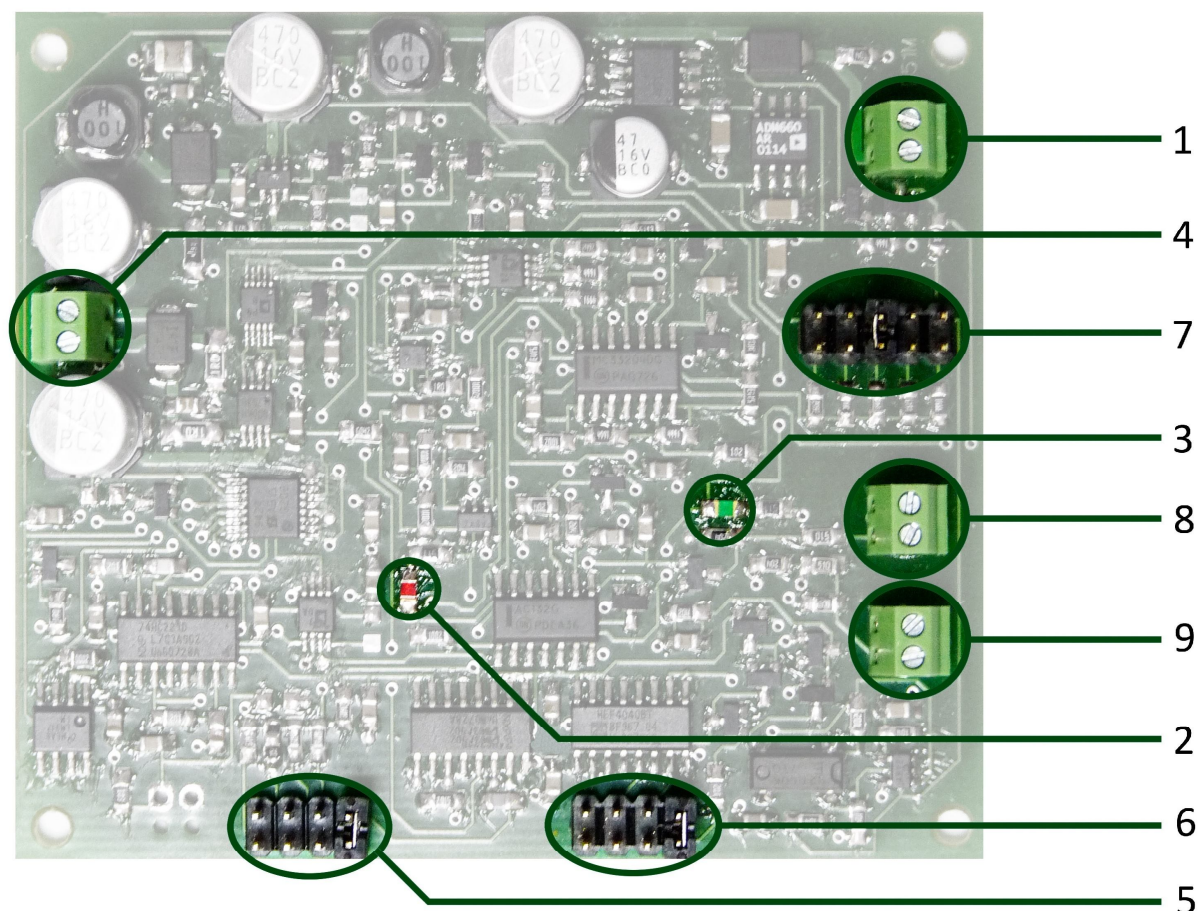
1. Power input terminal block.

2. Circuit break indicator (red).

3. LED current indicator (green).

4. LED connection terminal block.

5. Pulse duration adjustment jumper.

6. Frequency adjustment jumper.

7. LED current adjustment jumper.

8. Synchronization input terminal block.

9. Synchronization output terminal block.

D41-M driver works in a **pulse mode**. This mode provides LED maximum peak optical power. LED current can be changed switching the jumper 7 (0.4; 0.8; 1; 1.5; and 2.0 A). Pulse duration can be changed using the jumper 5 (2; 5; 10 and 20 μs). Frequency of an LED can be adjusted using the jumper 6 (512 Hz, 2 kHz, 8 kHz or 16 kHz). Frequency can be also adjusted by an external signal source connected via synchronization input.
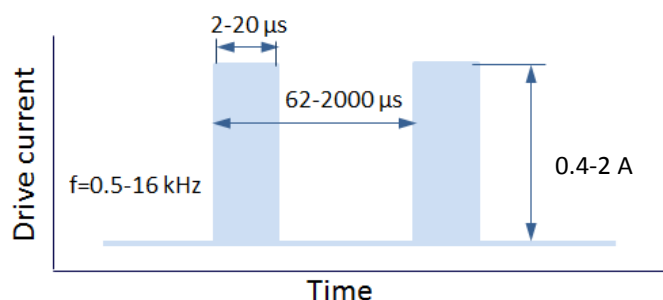
Pulse mode current-time relation.

Note! When external signal source is connected to the synchronization input, frequency of an LED is determined by this source and <u>NOT</u> by the jumper. External signal should meet the following requirements:

Pulse duration	>10 μs
Frequency	0.5 – 16 kHz
Pulse voltage amplitude	5 V

1. Carefully connect appropriate pins of the LED with LED connection terminal block (4) till tight fixation.

Note! Terminal block header marked with "LED +" must be connected to the appropriate pin of an LED (marked with a red point). Improper connection may cause LED damage.

Note! LED case must be electrically isolated from the ground.

2. If necessary, make all external connections with synchronization input (8) and synchronization output (9).
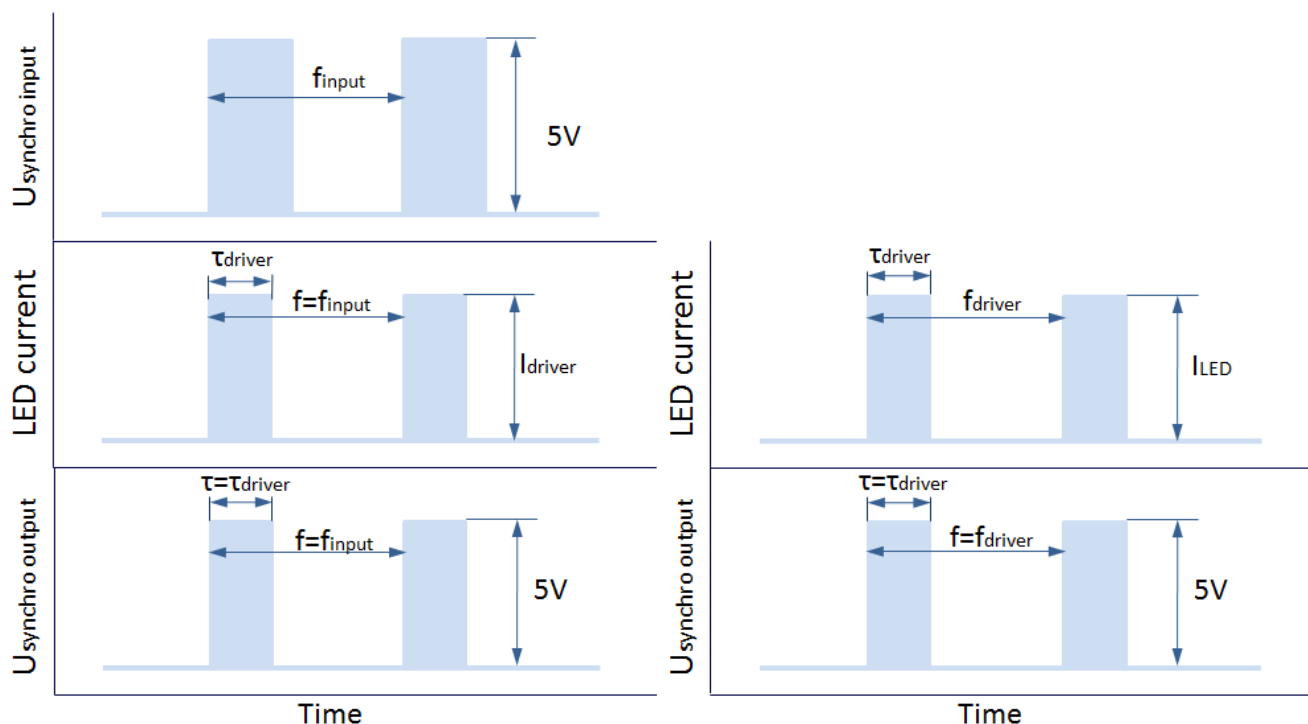
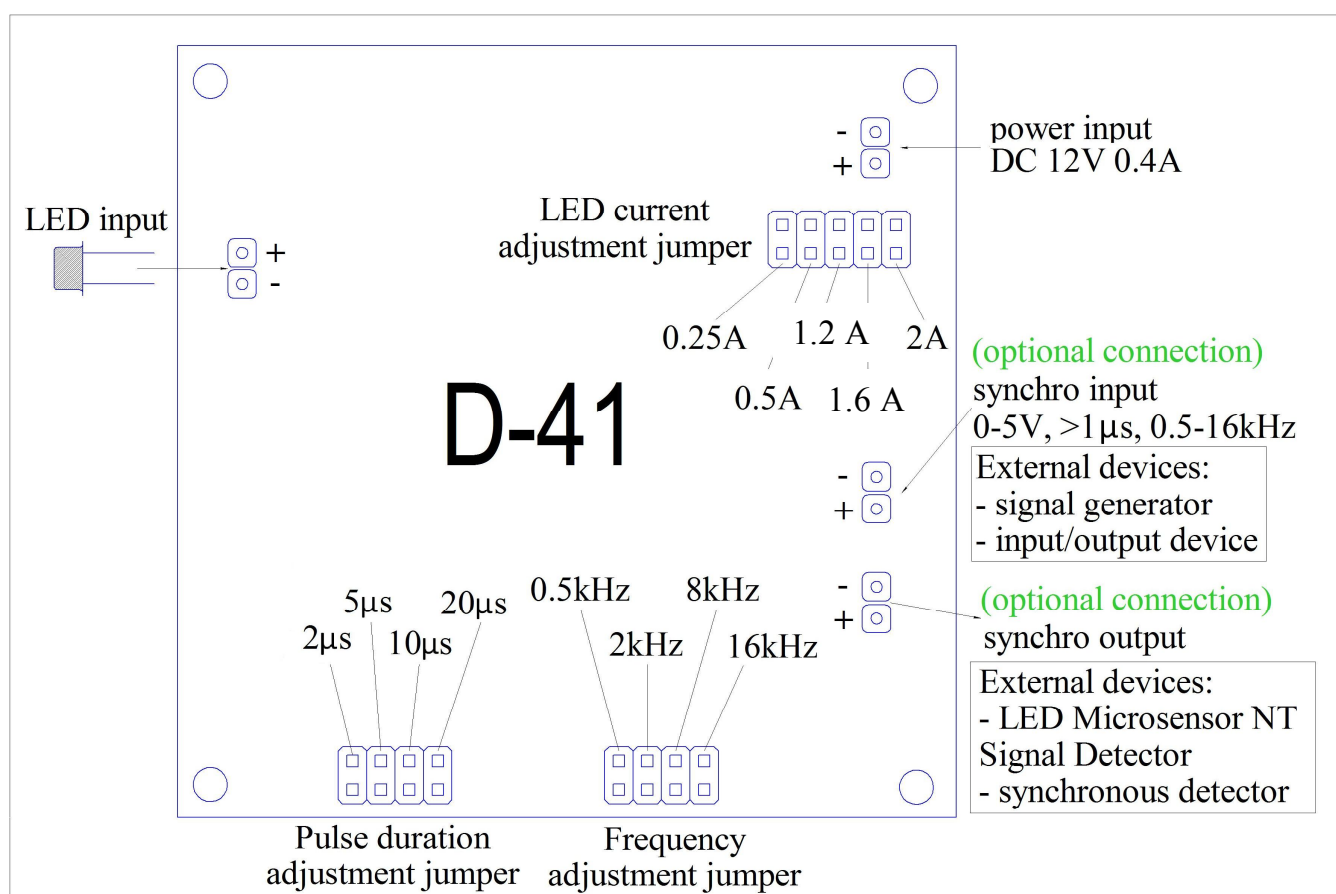*D41 signal synchronization with BOTH synchronization input and synchronization output*

D41 signal synchronization with synchronization output

3. Select required regime using pulse duration, frequency and LED current adjustment jumpers (5, 6 and 7 respectively). You can also adjust frequency with an external signal source connecting it to the synchronization input.

4. Connect power supply to the power input (1). LED current indicator (green) (3) will be turned on if everything is connected properly. In case of circuit break red indicator (2) will be turned on and LED current indicator (3) will be pulsing till the problem will be solved.

Note! Please follow the requirements presented in the table on the "Technical Characteristics" page to provide driver's faultless operation.

D41 connections

Input voltage	+12 V, stabilized
Voltage tolerance	-5..+5 %
Input current	max. 0.3 A
Board dimensions	80×70×15 mm
Synchronization output voltage	5 V

Adjustable parameters	
Pulse duration	2/5/10/20 µs
Frequency	0.5/2/8/16 kHz
Output current amplitude	0.4/0.8/1.2/1.6/2.0 A