

lamaPLC: TM1637 7-segment display



The TM1637 module is a driver for 4-digit 7-segment displays. These chips are standard in inexpensive display units. They communicate with the processor using an **I²C-like protocol**. The implementation relies entirely on software emulation and uses no specialized hardware, aside from GPIO pins. It is assumed that pull-up resistors are present, typically integrated into the display module.

- Operating voltage: 3.3 – 5 V DC
- Maximum current draw: 80mA
- Reverse polarity protection: Yes

Wiring Diagram

TM1637 Pin	Arduino	Pin Description
GND	GND	Ground
VCC	5V or 3.3V Power	(3.3V–5.25V DC)
DIO	Digital Pin 3	Data Input/Output (configurable)
CLK	Digital Pin 2	Clock Input (configurable)



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Required Library

Install the **TM1637Display** library by Avishay Orpaz through the Arduino IDE Library Manager (Sketch > Include Library > Manage Libraries...)

Arduino code

This code initializes the display, sets the brightness, and loops through a simple counter.

```
#include <TM1637Display.h>
```

```
// Define the connections
#define CLK 2
#define DIO 3

// Create a display object
TM1637Display display(CLK, DIO);

void setup() {
  display.setBrightness(0x0f); // Set brightness (0x00 to 0x0f)
  display.clear();           // Clear the display
}

void loop() {
  // Show a static number
  display.showNumberDec(1234);
  delay(2000);

  // Counter loop
  for (int i = 0; i <= 100; i++) {
    display.showNumberDec(i);
    delay(100);
  }

  display.clear();
  delay(1000);
}
```

Sources

[Arduino Doc TM1637 library](#)

Sensor topics on lamaPLC

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<ul style="list-style-type: none">lamaPLC project: Arduino - OLED SH1106 with AHT20/BMP280 Sensor	2026/02/12 22:14	bmp280 , aht20 , temperature , humidity , pressure , sensor , arduino , oled , sh1106 , arduino code
<ul style="list-style-type: none">lamaPLC: A0221AU / A02YYUW Waterproof Ultrasonic Distance Sensor with UART communication	2026/02/14 22:31	a0221au , a02yyuw , waterproof , ultrasonic , distance , sensor , uart , ip67 , serial , sen0311 , dfrobot
<ul style="list-style-type: none">LamaPLC: AHT10 Modul	2026/03/21 19:20	communication , i2c , temperature , humidity , sensor , aht , aht 10 , modul
<ul style="list-style-type: none">LamaPLC: AHT20 / BMP280 Modul	2026/02/15 20:33	bmp280 , aht20 , adafruit , temperature , humidity , pressure , sensor , arduino , code , i2c

• LamaPLC: Allegro ACS758 Hall-effect linear current sensors	2026/02/14 23:38	cjmcu, cjmcu-758, acs758, acs758lcb-050b, acs758lcb-100b, acs758kcb-150b, acs758ecb-200b, hall-effect, current, sensor, analog, arduino, code
• LamaPLC: APDS - Avago ALS and proximity detection sensors with I ² C communication	2026/02/14 22:24	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
• lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/03/28 22:07	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I ² C communication	2026/02/15 20:40	bme280, bme680, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, cjmcu
• LamaPLC: BQ25570 / CJMCU-2557 - Texas Instruments nano-power management IC and module	2026/02/14 23:36	bq25570, sensor, texas instruments, nano-power management, dc-dc boost charger, mppt, solar, thermoelectric, piezoelectric
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I ² C communication	2026/02/14 23:37	cjmcu-219, ina-219, ina219, breakout board, i2c, communication, sensor, voltage, current, arduino, code, cjmcu
• LamaPLC: CJMCU-3216 / AP-3216 integrated digital ambient light and proximity sensor module/IC with I ² C communication	2026/02/14 22:40	cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication
• LamaPLC: CJMCU-3901/PMW-3901 compact optical flow sensor module/IC by PixArt with SPI communication	2026/02/14 22:39	cjmcu-3901, cjmcu, pmw3901, pmw-3901, optical flow, sensor, pixart, spi, communication, arduino, code, pmw3901mb-txqt
• LamaPLC: CJMCU-6701: Biosensor for measuring Galvanic Skin Response (GSR) with SPI communication	2026/02/14 23:39	cjmcu, cjmcu-6701, acs758, acs-758, galvanic skin response, gsr, electrodermal activity, eda, spi, communication, arduino, code, sensor, healthcare
• LamaPLC: CJMCU-6814 combined gas sensor module for CO, NO ₂ , NH ₃	2026/02/14 22:16	analog, cjmcu, cjmcu-6814, mics6814, mics-6814, sensor, arduino, code, carbon monoxide, co, ammonia, nh ₃ , nitrogen dioxide, no ₂
• lamaPLC: CJMCU-811 CCS811 Gas Sensor (VOCs TVOC CO ₂)	2026/03/21 22:25	cjmcu-811, ccs811, gas, sensor, vocs, tvoc, eco2, co2, arduino, air quality metal oxide, mox, i2c
• LamaPLC: CJMCU-8221 Analog Devices Precision instrumentation amplifier module	2026/02/14 22:55	cjmcu-8221, ad8221ar, analog devices, amplifier, sensor, cjmcu
• LamaPLC: D6T Omron Non-Contact Thermal Sensors with I ² C communication	2026/02/14 18:19	d6t, d6t-32l, d6t-44l, d6t-8l, d6t-1a, omron, non-contact, thermal, sensor, i2c, arduino, code
• LamaPLC: DHT Temperature /Humidity sensors with 1-wire / I ² C communication	2026/02/15 20:42	dht11, dht20, dht22, temperature, humidity, pressure, sensor, 1-wire, arduino, code

<ul style="list-style-type: none"> • LamaPLC: DPS Infineon Temperature/Pressure sensors with I2C communication 	2026/02/14 18:11	dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code
<ul style="list-style-type: none"> • lamaPLC: DS18B20 1-Wire Digital Thermometer 	2026/02/15 20:44	ds18b20, sensor, 1-wire, communication, arduino, thermometer, parasitic mode
<ul style="list-style-type: none"> • lamaPLC: Energy, power, current, and voltage 	2025/05/31 21:32	i2c, i c, communication, arduino, energy, power, current, sensor, ina226
<ul style="list-style-type: none"> • LamaPLC: ENS ScioSense Multi-gas sensors with I²C communication 	2026/02/14 19:29	ens160, sciosense, gas-quality, i2c, communication, sensor, arduino, code, eco2, tvoc, aqi, indoor air quality, iaq, co2, voc
<ul style="list-style-type: none"> • lamaPLC: ENS160 + AHT21 Air Quality Sensor - CO, ECO, TVOC, Temp & Humidity Module 	2026/03/21 20:45	arduino, ens160, aht21, air quality, sensor, co, eco, tvoc, module, aqi
<ul style="list-style-type: none"> • LamaPLC: Gas sensors 	2023/07/01 15:29	gas, sensor, i2c, onewire, communication, mq-3, mq-4, mq-5, mq-6, mq-7, mq-8, mq-9, mq-135, gm-102b, gm-302b, gm-502b, gm-702b, alcohol, ch4, natural gas, smoke, lng, co, co2, lpg, h2, iso-butane, nox, nh3, benzene, town gas, formaldehyde, propane, humidity, temperature, voc, grv gas sens v2
<ul style="list-style-type: none"> • LamaPLC: GM MEMS Gas-sensors 	2026/02/14 22:18	gm-102b, gm-302b, gm-502b, gm-702b, mems, gas-quality, sensor, arduino, code, nitrogen dioxide, no2, volatile organic compounds, voc, carbon monoxide, co, ethyl alcohol, c2h5ch, formaldehyde, ch2o, alcohol, c2h5oh
<ul style="list-style-type: none"> • lamaPLC: GY-511 6DOF sensor module 	2026/03/22 00:26	stmicroelectronics, lsm303dlhc, i2c, lsm303, sensor, gy-511, 6dof, pololu, module, arduino
<ul style="list-style-type: none"> • LamaPLC: HC-SR04 Ultrasonic Sensor Module 	2026/02/14 22:19	hc-sr04, ultrasonic, sensor, arduino, code
<ul style="list-style-type: none"> • LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication 	2026/02/14 22:09	sht21, htu21, si7021, gy-21, gy-213v, hdc1080, gy-213v-hdc1080, cjmcu, cjmcu-1080, texas instruments, temperature, humidity, sensor, i2c, communication, arduino, code
<ul style="list-style-type: none"> • LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C communication 	2026/02/14 21:54	htu, htu31d, htu21d, htu20d, sht20, htu20, sht21, htu21, si7021, gy-21, gy-213v, hdc1080, si702, gy-20, sht31, htu31, si7031, gy-31, te connectivity, temperature, humidity, i2c, communication, sensor, arduino, code
<ul style="list-style-type: none"> • LamaPLC: HX711 24-bit analog-to-digital converter (ADC) 	2026/02/15 23:59	hx711, hx-711, analog-to-digital, adc, converter, load cell, wheatstone bridge, weight, sensor, communication, arduino, code

• lamaPLC: INA modules with Arduino libraries	2026/03/28 18:02	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, ina226, ina228, ina237, ina238, ina260, ina3221, ina
• lamaPLC: INA226 - current/voltage/power monitor with I²C communication	2026/02/14 23:58	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC	2026/02/14 23:35	communication, arduino, sensor, energy harvesting, energy, ambient power
• LamaPLC: M01 - V0.4 Laser ranging sensor with UART communication	2026/02/14 22:24	distance measurement, laser, distance, sensor, m01
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/02/14 23:38	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• lamaPLC: Max31865 RTD to Digital Converter - PT100/PT1000 Platine	2026/02/14 17:38	max31865, rtd, pt 100, pt 1000, temperature, spi, platinum, arduino, code, sensor, adafruit
• LamaPLC: MAX4466/MAX9814: Low-noise Microphone Preamplifiers	2026/02/15 17:35	audio, microphone, analogue audio, max4466, max9814, max 4466, max 9814, agc, preamplifiers, sensor, arduino, code
• LamaPLC: MH-Z19 series of NDIR CO₂ sensors	2026/02/15 20:20	mh-z19, mh-z19d, mh-z19c, mh-z19b, mh-z19e, ndir, co ₂ , sensor, winsen, uart, pwm, communication, non-dispersive infrared, infrared, ir, temperature, arduino, code, tasmota
• lamaPLC: MPU-6050 (HW-123, GY-521) 6-axis MotionTracking device	2026/03/22 01:24	mpu-6050, hw-123, gy-521, 6-axis motiontracking, dmp, temperature, sensor, mems, arduino code, arduino, accelerometer, gyroscope, tilt
• LamaPLC: MQ Winsen Gas-sensors	2026/02/14 21:17	mq, mq-2, mq-3, mq-4, mq-5, mq-6, mq-7, mq-8, mq-9, mq-131, mq-135, mq-137, winsen, gas-sensor, sensor, arduino, code, alcohol, c ₂ h ₅ oh, benzine gas, smoke, lpg, propane, c ₃ h ₈ , hydrogen, h ₂ , methane, ch ₄ , iso-butane, town gas, ammonia, nh ₃
• LamaPLC: PIR sensors	2026/02/15 16:39	hc-sr501, hc-sr505, am-312, ekmb ekmc, pir, motion, sensor, arduino, code
• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication	2026/02/14 22:23	paj7620u2, gy-paj7620, pixart, gesture recognition, i2c, communication, sensor, arduino, code
• lamaPLC: PT100 / PT1000	2025/09/23 16:59	pt100, pt1000, temperature, sensor, platine, rtd
• lamaPLC: PTA8C04 4-channel PT100 Modbus Modul	2026/02/14 17:42	pta8c04, sensor, modbus, rtu, rs-485, communication, platine, um72
• LamaPLC: RCWL - Microwave radar sensor	2026/02/14 22:33	rcwl-0516, rcwl, microwave, radar, sensor, arduino, code

- [• lamaPLC: RD-xx - Ai-Thinker Radar Module with UART communication](#)

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[radar, s3km1110, fmcw, rd-01, rd-03, rd-03d, ai-thinker, k-band, 24 ghz, sensor, distance, micro-movements](#)

- [• LamaPLC: SGP Sensirion Gas-sensors with I²C communication](#)

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[sgp30, sgp40, sgp41, sensirion, gas-sensor, i2c, communication, sensor, arduino, code, eco2, voc, tvoc, indoor air quality, iaq, nox, hydrogen](#)

- [• LamaPLC: SHT Sensirion Temperature/humidity sensor with I²C communication](#)

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[sht20, sht21, sht25, sht30, sht31, sht35, sht40, gy21, temperature, humidity, i2c, communication, sensor, arduino, code](#)

- [• LamaPLC: Texas Instruments ADCs: Delta-sigma multi-channel Analog Converters with SPI communication](#)

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[ads111x, ads12xx, delta-sigma, converter, texas instruments, adc, spi, communication, sensor, arduino, code, ads1110, ads1112, ads1113, ads1114, ads1115, ads1118, ads1119, ads1220, ads1232, ads1234, ads1256, ads1261, ads1263, multi channel](#)

- [• LamaPLC: TOFnnnC STMicroelectronics Time-of-Flight \(ToF\) sensors with I²C communication](#)

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[tof050c, vl6180, tof200c, vl53l0x, tof400c, vl53l1x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code](#)

- [• LamaPLC: UICPAL Temp.humi.sensor](#)

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[simatic, s7, modbus, communication, temperature, humidity, sensor](#)

- [• LamaPLC: VL53Lnn STMicroelectronics time-of-flight \(ToF\) laser-ranging sensors with I²C communication](#)

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[vl53l0x, vl53l1x, vl53l0 1xv2, gy-530, time-of-flight, tof, laser-ranging, i2c, communication, sensor, arduino, code](#)

- [• LamaPLC: VL6180X STMicroelectronics Time-of-Flight \(ToF\) sensor with I²C communication](#)

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[vl6180x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code](#)

- [• LamaPLC: Waveshare TOF Laser Range Sensor with UART / I²C communication](#)

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[distance measurement, laser, range, sensor, tof, waveshare](#)

- [• lamaPLC: YR-3180 - Weight sensor module with UART or Modbus communication](#)

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[communication, modbus, rtu, sensor, weight, yr-3180, hx710b, arduino, ttl, rs-485](#)

- [• Magnetic angle sensors](#)

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[magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive](#)

- [• NT18B07: 7 Kanal RS485 Temperatur Sensor with Modbus RTU](#)

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[nt18b07, sensor, modbus, rtu, rs-485, communication, platine](#)

- [• PT100 / PT1000 sensors](#)

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[rtd, pt100, pt1000, sensor, temperature](#)

- [• Radar Module RD-xx](#)

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[radar, s3km1110, fmcw, rd-03, k-band, 24 ghz, sensor, distance, micro-movements](#)

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