

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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2026/02/14 23:38

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

Page	Date	Tags
<ul style="list-style-type: none">• lamaPLC project: Arduino - OLED SH1106 with AHT20/BMP280 Sensor	2026/04/23 21:51	bmp280 , aht20 , temperature , humidity , pressure , sensor , arduino , oled , sh1106 , arduino code
<ul style="list-style-type: none">• lamaPLC project: Arduino - Vibration sensors	2026/04/15 17:21	vibration , sensor , piezoelectric , mems , eddy-current , electrodynamic , gxfm0459 , ldtm-028k , arduino , arduino code
<ul style="list-style-type: none">• lamaPLC project: Digitales Potentiometer Board Moduls	2026/04/11 18:29	sensor , module , arduino code , renesas , x9c series , x9c102 , x9c103 , x9c104 , x9c503 , xdcp , digitally controlled potentiometer
<ul style="list-style-type: none">• lamaPLC project: Sension SCD CO² measurement module	2026/04/15 19:34	scd30 , scd40 , scd41 , iaq , ndir , sensor , i2c , arduino code

• lamaPLC: A0221AU / A02YYUW Waterproof Ultrasonic Distance Sensor with UART communication	2026/04/23 21:52	a0221au, a02yyuw, waterproof, ultrasonic, distance, sensor, uart, ip67, serial, sen0311, dfrobot
• LamaPLC: AHT10 Modul	2026/03/22 03:14	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• LamaPLC: AHT20 / BMP280 Modul	2026/04/23 21:52	bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c
• LamaPLC: Allegro ACS758 Hall-effect linear current sensors	2026/04/23 21:52	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	2026/04/23 21:52	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
• lamaPLC: Arduino Modul: BME680	2026/05/12 18:40	code, c, 2026, arduino, bme680, sensor, i2c, comunication
• lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/05/13 00:06	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I ² C communication	2026/04/23 21:52	bme280, bme680, bme688, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, ai, cjmcu, volatile organic compounds, vocs, volatile sulfur compounds, vscs, iaq
• LamaPLC: BQ25570 / CJMCU-2557 - Texas Instruments nano-power management IC and module	2026/04/23 21:52	bq25570, sensor, texas instruments, nano-power management, dc-dc boost charger, mppt, solar, thermoelectric, piezoelectric, energy harvesting, eh
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I ² C communication	2026/04/23 21:52	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	2026/04/23 21:52	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	2026/04/23 21:52	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	2026/04/23 21:52	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	2026/04/23 21:52	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 \(VOCs TVOC CO2\)](#) 2026/04/23 21:52 [cjmcu-811](#), [ccs811](#), [gas](#), [sensor](#), [vocs](#), [tvoc](#), [eco2](#), [co2](#), [arduino](#), [air quality](#) [metal oxide](#), [mox](#), [i2c](#), [micropython](#), [rp2040-eth](#)
- [LamaPLC: CJMCU-8221 Analog Devices Precision instrumentation amplifier module](#) 2026/04/23 21:52 [cjmcu-8221](#), [ad8221ar](#), [analog devices](#), [amplifier](#), [sensor](#), [cjmcu](#)
- [LamaPLC: D6T Omron Non-Contact Thermal Sensors with I²C communication](#) 2026/04/23 21:52 [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 / I²C communication](#) 2026/04/23 21:52 [dht11](#), [dht20](#), [dht22](#), [temperature](#), [humidity](#), [pressure](#), [sensor](#), [1-wire](#), [arduino](#), [code](#)
- [LamaPLC: DPS Infineon Temperature/Pressure sensors with I2C communication](#) 2026/04/23 21:52 [dps310](#), [infineon](#), [temperature](#), [pressure](#), [sensor](#), [arduino](#), [i2c](#), [communication](#), [code](#)
- [lamaPLC: DS18B20 1-Wire Digital Thermometer](#) 2026/04/23 21:52 [ds18b20](#), [sensor](#), [1-wire](#), [communication](#), [arduino](#), [thermometer](#), [parasitic mode](#)
- [lamaPLC: Energy, power, current, and voltage](#) 2025/05/31 23:32 [i2c](#), [i c](#), [communication](#), [arduino](#), [energy](#), [power](#), [current](#), [sensor](#), [ina226](#)
- [LamaPLC: ENS ScioSense Multi-gas sensors with I²C communication](#) 2026/04/23 21:52 [ens160](#), [sciosense](#), [gas-quality](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#), [eco2](#), [tvoc](#), [aqi](#), [indoor air quality](#), [iaq](#), [co2](#), [voc](#)
- [lamaPLC: ENS160 + AHT21 Air Quality Sensor - CO, ECO, TVOC, Temp & Humidity Module](#) 2026/04/23 21:52 [arduino](#), [ens160](#), [aht21](#), [air quality](#), [sensor](#), [co](#), [eco](#), [tvoc](#), [module](#), [aqi](#)
- [LamaPLC: Gas sensors](#) 2023/07/01 17:29 [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](#)
- [LamaPLC: GM MEMS Gas-sensors](#) 2026/04/23 21:52 [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](#)
- [lamaPLC: GY-511 6DOF sensor module](#) 2026/03/22 01:44 [stmicroelectronics](#), [lsm303dlhc](#), [i2c](#), [lsm303](#), [sensor](#), [gy-511](#), [6dof](#), [pololu](#), [module](#), [arduino](#)
- [LamaPLC: HC-SR04 Ultrasonic Sensor Module](#) 2026/04/23 21:52 [hc-sr04](#), [ultrasonic](#), [sensor](#), [arduino](#), [code](#)
- [LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication](#) 2026/04/23 21:52 [sht21](#), [htu21](#), [si7021](#), [gy-21](#), [gy-213v](#), [hdc1080](#), [gy-213v-hdc1080](#), [cjmcu](#), [cjmcu-1080](#), [texas instruments](#), [temperature](#), [humidity](#), [sensor](#), [i2c](#), [communication](#), [arduino](#), [code](#)

• LamaPLC: HTU TE Connectivity temperature/humidity sensors with I ² C communication	2026/04/23 21:52	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
• LamaPLC: HX711 24-bit analog-to-digital converter (ADC)	2026/04/11 18:28	hx711, hx-711, analog-to-digital, adc, converter, load cell, wheatstone bridge, weight, sensor, communication, arduino, code
• lamaPLC: INA modules with Arduino libraries	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, gy-219, ina226, gy-216, ina228, gy-228, ina237, ina238, ina260, ina3221, ina
• lamaPLC: INA226 - current/voltage/power monitor with I ² C communication	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC	2026/04/23 21:52	communication, arduino, sensor, energy harvesting, eh, energy, ambient power
• LamaPLC: M01 - V0.4 Laser ranging sensor with UART communication	2026/04/23 21:52	distance measurement, laser, distance, sensor, m01
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/04/23 21:52	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• lamaPLC: Max31865 RTD to Digital Converter - PT100/PT1000 Platine	2026/04/23 21:52	max31865, rtd, pt 100, pt 1000, temperature, spi, platinum, arduino, code, sensor, adafruit
• LamaPLC: MAX4466/MAX9814: Low-noise Microphone Preamplifiers	2026/04/23 21:52	audio, microphone, analogue audio, max4466, max9814, max 4466, max 9814, agc, preamplifiers, sensor, arduino, code
• LamaPLC: MH-Z19 series of NDIR CO ₂ sensors	2026/04/23 21:52	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	2026/04/23 21:52	mpu-6050, hw-123, gy-521, 6-axis motiontracking, dmp, temperature, sensor, mems, arduino code, arduino, accelerometer, gyroscope, tilt
• LamaPLC: MQ Winsen Gas-sensors	2026/04/23 21:52	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	2026/04/23 21:52	hc-sr501, hc-sr505, am-312, ekmb ekmc, pir, motion, sensor, arduino, code

• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication	2026/04/23 21:52	paj7620u2 , gy-paj7620 , pixart , gesture recognition , i2c , communication , sensor , arduino , code
• lamaPLC: PT100 / PT1000	2025/09/23 18:59	pt100 , pt1000 , temperature , sensor , platine , rtd
• lamaPLC: PTA8C04 4-channel PT100 Modbus Modul	2026/02/14 18:42	pta8c04 , sensor , modbus , rtu , rs-485 , communication , platine , um72
• LamaPLC: RCWL - Microwave radar sensor	2026/04/23 21:52	rcwl-0516 , rcwl , microwave , radar , sensor , arduino , code
• lamaPLC: RD-xx - Ai-Thinker Radar Module with UART communication	2026/04/23 21:52	radar , s3km1110 , fmcw , rd-01 , rd-03 , rd-03d , ai-thinker , k-band , 24 ghz , sensor , distance , micro-movements
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data	2026/05/12 21:06	code , micropython , 2026 , rp2040 eth , bme680 , i2c , sensor , communication
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data and store in Modbus input registers	2026/05/12 18:58	code , micropython , 2026 , rp2040 eth , bme680 , i2c , sensor , communication
• LamaPLC: SGP Sensirion TVOC/VOC sensors with I²C communication	2026/04/15 19:41	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	2026/04/23 21:52	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	2026/04/23 21:52	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	2026/04/23 21:52	tof050c , vl6180 , tof200c , vl53l0x , tof400c , vl53l1x , stmicroelectronics , time-of-flight , tof , i2c , communication , sensor , arduino , code
• LamaPLC: UICPAL Temp.humi.sensor	2023/06/25 00:43	simatic , s7 , modbus , communication , temperature , humidity , sensor
• LamaPLC: VL53Lnn STMicroelectronics time-of-flight (ToF) laser-ranging sensors with I²C communication	2026/04/23 21:52	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	2026/04/23 21:52	vl6180x , stmicroelectronics , time-of-flight , tof , i2c , communication , sensor , arduino , code
• LamaPLC: Waveshare TOF Laser Range Sensor with UART / I²C communication	2026/04/23 21:52	distance measurement , laser , range , sensor , tof , waveshare
• lamaPLC: XGZP68xx: Silicon Pressure Sensors/Module	2026/05/15 15:17	communication , i2c , sensor , modul , pressure , cfsensor , xgzp68xx , xgzp6810d , xgzp6857d , xgzp6859d , xgzp6887d , xgzp6897d , xgzp6899a , piezoresistive , capacitive

- [lamaPLC: YR-3180 - Weight sensor module with UART or Modbus communication](#) 2026/02/15 00:00 [communication, modbus, rtu, sensor, weight, yr-3180, hx710b, arduino, ttl, rs-485](#)
- [LM393: Dual differential comparator \(flame, light, sound sensors\)](#) 2026/05/12 22:18 [communication, analog, lm393, lm-393, flame, ir, sound, hall, sensor, ky-026, hw-484, ky-037, ky-038, fc-03, hc-89, ky-024, modul](#)
[magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive](#)
- [Magnetic angle sensors](#) 2026/03/05 21:19 [nt18b07, sensor, modbus, rtu, rs-485, communication, platine](#)
- [NT18B07: 7 Kanal RS485 Temperatur Sensor with Modbus RTU](#) 2026/02/14 18:49 [rtd, pt100, pt1000, sensor, temperature](#)
- [PT100 / PT1000 sensors](#) 2026/04/23 21:52 [radar, s3km1110, fmcw, rd-03, k-band, 24 ghz, sensor, distance, micro-movements](#)
- [Radar Module RD-xx](#) 2026/04/23 21:52

[i2c](#), [7-segment display](#), [display](#), [TM1637](#), [Arduino](#)

This page has been accessed for: Today: 1, Until now: 138

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Last update: **2026/04/21 20:47**

