

# lamaPLC project: Digitales Potentiometer Board Moduls

A digital potentiometer (or “digipot”), such as the **Renesas X9C** series, is a semiconductor device that replicates the function of a mechanical potentiometer—varying resistance—but replaces the manual knob with digital control signals.

## Renesas X9C series

The X9C102, X9C103, X9C104, and X9C503 are digitally controlled (XDCCP) potentiometers. The device consists of a resistor array, wiper switches, a control section, and nonvolatile memory. The wiper position is controlled by a three-wire interface.

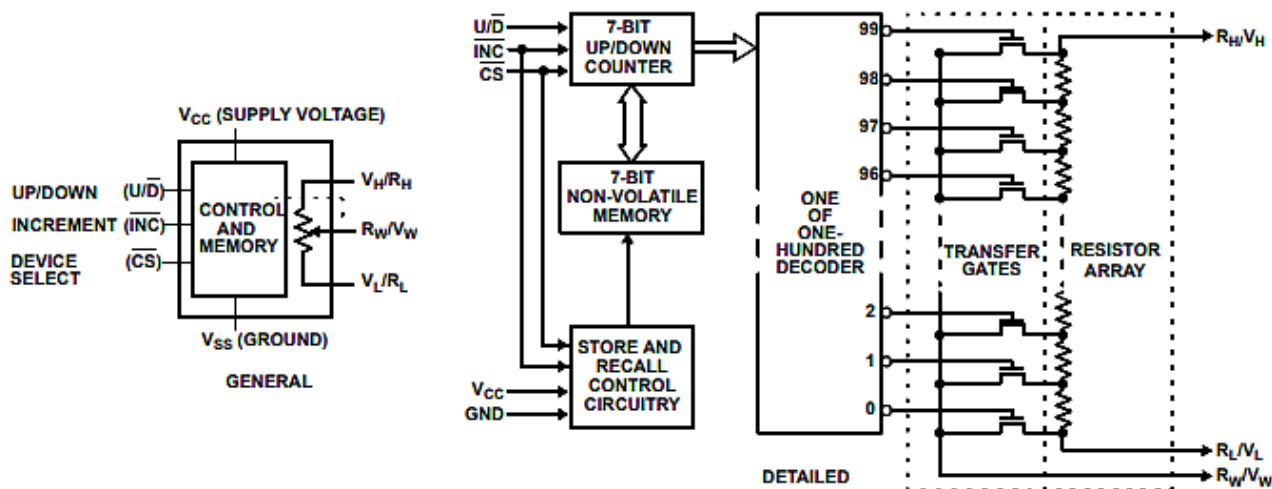


The potentiometer is implemented using a resistor array composed of 99 resistive elements and a wiper-switching network. Between each element and at either end are tap points accessible to the wiper terminal. The position of the wiper element is controlled by the CS, U/D, and INC inputs. The wiper position can be stored in non-volatile memory and recalled upon subsequent power-up.

The device can be used as a three-terminal potentiometer or a two-terminal variable resistor in a wide variety of applications, from control to signal processing to parameter adjustment.

Model	Total Resistance ( $R_{total}$ )	Step Size (approx.)	Temp.Coefficient	Max Terminal Voltage Differential ( $\Delta V$ )
X9C102	1 K $\Omega$	10.1 $\Omega$	+600 ppm/ $^{\circ}$ C	4 V
X9C103	10 K $\Omega$	101 $\Omega$	+300 ppm/ $^{\circ}$ C	10 V
X9C104	100 K $\Omega$	505 $\Omega$	+300 ppm/ $^{\circ}$ C	10 V
X9C503	50 K $\Omega$	1010 $\Omega$	+300 ppm/ $^{\circ}$ C	10 V

- **Resolution:** 100 Wiper Tap Points (0–99).
- **Interface:** 3-wire serial (CS, U/D, INC).
- **Memory:** Non-volatile EEPROM (retains position for 100 years).
- **Supply Voltage (Vcc):** 5V
- **Resistance Tolerance:**  $\pm 20\%$  end-to-end.
- **Typical Wiper Resistance:** 40  $\Omega$  at 1 mA



Full datasheet: <https://www.renesas.com/en/document/dst/x9c102-x9c103-x9c104-x9c503-datasheet>

## Wiring

## Communication topics on lamaPLC

Page	Date	Tags
<ul style="list-style-type: none"> <li>• <a href="#">ISM Band</a></li> </ul>	2025/11/10 18:53	ism, ism band, rfid, nfc, dash7, hc-12, arduino, zigbee, z-wave, bluetooth, wi-fi, thread, miwi, nrf24, starlink, wiegand, rf, communication, bus, radio, ku band, ka band, k band, x band
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: 1-Wire</a></li> </ul>	2025/05/31 21:56	1-wire, communication, bus, microlan, i2c, uart, usart, ds18b20
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: AS-i</a></li> </ul>	2025/05/31 22:51	bus, communication, as-i, basic, industrial ethernet, devicenet, interbus, manchester-ii, apm
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: Bluetooth basic</a></li> </ul>	2025/11/19 21:52	communication, bus, bluetooth, ism, ieee, 802.15.1, ble, lmp, l2cap, rfcomm, iot, arduino, hc-05, hc-06
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: CAN</a></li> </ul>	2025/11/20 20:43	communication, bus, can, canopen, most, automotive ethernet, sent sae-j2716, flexray, lin bus
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: ControlNet</a></li> </ul>	2025/05/31 22:58	bus, communication, devicenet, cip, can, ethernet ip, ethernet, controlnet, mac, peer-to-peer, allen-bradley, rockwell automation, fieldbus, rg-6, coaxial cable
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC Communication: DALI</a></li> </ul>	2024/11/16 20:08	communication, rs-232, dali, light technic, diia, selv, manchester, asynchronous, half-duplex, serial, iec 62386, d4i, dali-2, dt6, dt8

• lamaPLC Communication: DASH7	2024/11/16 20:21	bus, communication, dash7, ism, srd, aes 128, d7a, blast, iot, rfid
• lamaPLC Communication: DeviceNet	2024/11/16 19:43	bus, communication, devicenet, 62026-3, cip, can, ethernet ip, ethernet, controlnet, mac, peer-to-peer, canopen, allen-bradley, rockwell automation, bosch
• lamaPLC Communication: DMX512	2024/11/16 00:16	bus, communication, dmx512, dmx512-a, rs-485, xlr3, xlr5
• lamaPLC Communication: EtherNet/IP	2024/11/17 00:26	communication, ethernet, bus, ip, cip, ethernet ip, udp, industrial ethernet, ie, tcp, unicast, devicenet, controlnet, ieee 802.3
• lamaPLC Communication: GPS	2024/11/15 20:15	communication, satellite, navigation, gps, oxc, cdma, glonass, beidou, galileo, qzss, uart, arduino
• lamaPLC Communication: IEC 61850 basic	2025/09/23 21:03	1-wire, communication, bus, xml, iec 61850, iec, ethernet, scl, goose, ied
• lamaPLC Communication: InterBus	2024/11/16 00:46	bus, communication, interbus, phoenix contact, en 50254, iec 61158
• lamaPLC Communication: IoT	2025/05/31 22:50	communication, iot, internet, iomt, 6lowpan, ipv4, ipv6, bluetooth, ble, li-fi, nfc, rfid, wi-fi, zigbee, z-wave, lte-advanced, 5g, lora, dash7, lpwan, lorawan, sigfox, nb-iot, weightless, rpma, mioty, vsat, ethernet, thread, matter
• lamaPLC Communication: I <sup>2</sup> C	2025/09/23 19:25	i2c, i c, smbus, philips, bus, communication, arduino
• lamaPLC Communication: KNX / EIB	2024/11/15 20:18	communication, bus, knx, knx tp, knx pl, knx rf, knx ip, eib, ehs, batibus, ethernet, ets
• lamaPLC Communication: LoRa, LoRaWAN and LoRa Mesh	2026/03/05 15:43	communication, bus, lora, lorawan, loramesh, mesh, ism, the things network, ttn, aloha, beaconing, csma, csma-ca, mac, adaptive data rate, adr, spreading factor, sf, transmission power, eu863, eu863-870, eu433, us902-928, au915-928, as923, in865-867, cn433, cn470, cn779, cn920, semtech, sx1261, sx1262, sx1276, sx1272, sx1278, encoding rate, er, time on air, toa, iot, netid, listen before talk, lbt
• lamaPLC communication: Matter	2024/11/15 20:21	communication, iot, matter, ethernet, tcp, udp, ipv6, thread, ble, cellular, wifi, pki, ip
• lamaPLC Communication: Modbus	2025/11/19 21:42	modbus, communication, bus, modicon, standard, rtu, tcp, multimaster, coil, register
• lamaPLC Communication: MQTT	2024/11/15 20:28	communication, mqtt, iot, tcp, udp, bluetooth, tcp ip, quic, mqtt-sn, oasis, message broker, mosquitto, qos, arduino, iso iec 20922

- [lamaPLC Communication: NFC](#) 2025/05/31 22:16 [communication, nfc, rfid, bluetooth, ble, manchester, ask, iso iec 18092](#)
- [lamaPLC Communication: NRF24](#) 2024/11/16 01:26 [bus, communication, nrf24, ism, ism band, gfsk, rpd, arduino](#)
- [lamaPLC Communication: OPC](#) 2024/11/15 20:33 [communication, opc, scada, ole, net, xml, tcp, hmi, server, opc ua, opc ua client, mqtt, json, dcom, simatic, erp](#)
- [lamaPLC Communication: PowerLink](#) 2024/11/15 21:15 [communication, bus, ethernet, tcp, udp, http, powerlink, fast ethernet, opensafety](#)
- [lamaPLC Communication: Profibus](#) 2024/11/16 19:09 [profibus, profibus pa, profibus dp, communication, fieldbus, bus, iec 61158, iec 61784-1, profinet, rs-485](#)
- [lamaPLC Communication: RFID](#) 2025/05/31 21:52 [communication, rfid, radio, rf, aidc, prat, arpt, arat, bap, uhf, nfc, em4100, t5557, tag, manchester, fsk, psk, biphas, nrz](#)
- [lamaPLC Communication: RS-232](#) 2024/11/15 21:51 [bus, communication, rs-232, rs, basic](#)
- [lamaPLC Communication: RS-422](#) 2024/11/15 21:50 [bus, communication, rs-422, rs, basic](#)
- [lamaPLC Communication: RS-485](#) 2024/11/15 21:52 [bus, communication, rs-485, rs, basic, profibus](#)
- [lamaPLC Communication: SCADA](#) 2024/11/17 00:33 [communication, scada, industry, industrial, hmi](#)
- [lamaPLC Communication: Sinec H1](#) 2024/11/16 20:44 [communication, bus, fieldbus, sinec-h1, s5, s7, simatic, siemens, industrial ethernet, ie, iec 8073](#)
- [lamaPLC Communication: SPI](#) 2024/11/15 21:58 [bus, communication, spi, basic, arduino, ssi, sdi, miso, sdo](#)
- [lamaPLC Communication: TCP / UDP Basic](#) 2025/11/20 21:49 [communication, bus, tcp, udp, tcp ip, darpa, ietf, smtp, http, https, ftp, ftps, ssh, pop3, imap, mysql, cpanel, whm, ssl, webmail, mqtt, ethernet, ip](#)
- [lamaPLC communication: Thread](#) 2024/11/15 22:07 [bus, communication, matter, thread, matter over thread, zigbee, aes, ipv6, iot, 6lowpan, ethernet, wifi](#)
- [lamaPLC Communication: UART / USART basic](#) 2025/02/11 20:21 [bus, communication, uart, rs-232, rs-422, rs-485](#)
- [lamaPLC Communication: USB](#) 2025/11/20 23:07 [usb, usb otg, otg, msc, ums, mtp, dfu, uac, adc, communication, bus, basic](#)
- [lamaPLC Communication: Wi-Fi](#) 2024/11/16 18:46 [communication, iot, internet, wi-fi, wifi, ieee 802.11](#)
- [lamaPLC Communication: Wiegand](#) 2024/11/16 23:39 [wiegand, communication, interface, cr80, iec 7810, h10301, hid, wiegand 26, wiegand 32, wiegand 34, wiegand 35, wiegand 37, wiegand 38, wiegand 42](#)
- [lamaPLC Communication: WS2812](#) 2024/11/15 23:36 [bus, communication, ws2812, ws2812b, ws 2812, ws 2812 b, 5050smd, 4020, 2020, 3535, 5050, nzc, rgb chip, led, arduino, rgb](#)
- [lamaPLC Communication: Z-Wave](#) 2024/11/17 21:25 [communication, ethernet, bus, ip, z-wave, ism](#)

• lamaPLC Communication: Zigbee	2024/11/17 21:43	communication, ethernet, bus, ip, zigbee, wpan, bluetooth, wi-fi, ism, ieee 802.15.4, zdo, zigbee pro, zc, zr, zed, smart energy, homegrid, homeplug, powerline, ipso, sunspec, 6lowpan, ipv6, rf4ce
• LamaPLC: AHT10 Modul	2026/03/21 19:20	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• lamaPLC: AI-Thinker LoRA products	2026/03/05 15:40	ai-thinker, lora manufacturer, communication, lora, modul, ra-01, ra-02, spi, arduino
• LamaPLC: APDS - Avago ALS and proximity detection sensors with I <sup>2</sup> 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 <sup>2</sup> C communication	2026/02/15 20:40	bme280, bme680, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, cjmcu
• lamaPLC: CJMCU-164; SN74HC164D 8-bit Shift Register Module	2026/02/14 22:48	cjmcu-164, sn74hc164d, 8-bit shift register, communication, 7-segment, cjmcu, arduino
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I <sup>2</sup> 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 <sup>2</sup> 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: DPS Infineon Temperature/Pressure sensors with I <sup>2</sup> C communication	2026/02/14 18:11	dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code
• lamaPLC: DS18B20 1-Wire Digital Thermometer	2026/02/15 20:44	ds18b20, sensor, 1-wire, communication, arduino, thermometer, parasitic mode
• lamaPLC: Ebyte LoRA products	2026/03/05 15:20	ebyte, lora manufacturer, communication, lora, modul
• 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"> <li>• <a href="#">LamaPLC: ENS ScioSense Multi-gas sensors with I<sup>2</sup>C communication</a></li> </ul>	<p>2026/02/14 19:29</p>	<p><a href="#">ens160</a>, <a href="#">sciosense</a>, <a href="#">gas-quality</a>, <a href="#">i2c</a>, <a href="#">communication</a>, <a href="#">sensor</a>, <a href="#">arduino</a>, <a href="#">code</a>, <a href="#">eco2</a>, <a href="#">tvoc</a>, <a href="#">aqi</a>, <a href="#">indoor air quality</a>, <a href="#">iaq</a>, <a href="#">co2</a>, <a href="#">voc</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: ESP32 / ESP8266</a></li> </ul>	<p>2025/11/21 23:07</p>	<p><a href="#">esp8266</a>, <a href="#">esp32</a>, <a href="#">esp32-c2</a>, <a href="#">esp32-c3</a>, <a href="#">esp32-c5</a>, <a href="#">esp32-c6</a>, <a href="#">esp32-c61</a>, <a href="#">esp32-h2</a>, <a href="#">esp32-s2</a>, <a href="#">esp32-s3</a>, <a href="#">esp32-p4</a>, <a href="#">espressif systems</a>, <a href="#">communication</a>, <a href="#">ethernet</a>, <a href="#">ip</a>, <a href="#">wi-fi</a>, <a href="#">thread</a>, <a href="#">zigbee</a>, <a href="#">matter</a>, <a href="#">homekit</a>, <a href="#">bluetooth</a>, <a href="#">mqtt</a>, <a href="#">adc</a>, <a href="#">spi</a>, <a href="#">uart</a>, <a href="#">i2c</a>, <a href="#">i2s</a>, <a href="#">rmt</a>, <a href="#">pwm</a>, <a href="#">usb</a>, <a href="#">usb otg</a>, <a href="#">twai</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">LamaPLC: Gas sensors</a></li> </ul>	<p>2023/07/01 15:29</p>	<p><a href="#">gas</a>, <a href="#">sensor</a>, <a href="#">i2c</a>, <a href="#">onewire</a>, <a href="#">communication</a>, <a href="#">mq-3</a>, <a href="#">mq-4</a>, <a href="#">mq-5</a>, <a href="#">mq-6</a>, <a href="#">mq-7</a>, <a href="#">mq-8</a>, <a href="#">mq-9</a>, <a href="#">mq-135</a>, <a href="#">gm-102b</a>, <a href="#">gm-302b</a>, <a href="#">gm-502b</a>, <a href="#">gm-702b</a>, <a href="#">alcohol</a>, <a href="#">ch4</a>, <a href="#">natural gas</a>, <a href="#">smoke</a>, <a href="#">lng</a>, <a href="#">co</a>, <a href="#">co2</a>, <a href="#">lpg</a>, <a href="#">h2</a>, <a href="#">iso-butane</a>, <a href="#">nox</a>, <a href="#">nh3</a>, <a href="#">benzene</a>, <a href="#">town gas</a>, <a href="#">formaldehyde</a>, <a href="#">propane</a>, <a href="#">humidity</a>, <a href="#">temperature</a>, <a href="#">voc</a>, <a href="#">grv gas sens v2</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board</a></li> </ul>	<p>2026/02/14 22:45</p>	<p><a href="#">ak8963</a>, <a href="#">gy-9250</a>, <a href="#">mpu-9250</a>, <a href="#">9-axis</a>, <a href="#">motion detection</a>, <a href="#">magnetometer</a>, <a href="#">communication</a>, <a href="#">i c</a>, <a href="#">i2c</a>, <a href="#">spi</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I<sup>2</sup>C communication</a></li> </ul>	<p>2026/02/14 22:09</p>	<p><a href="#">sht21</a>, <a href="#">htu21</a>, <a href="#">si7021</a>, <a href="#">gy-21</a>, <a href="#">gy-213v</a>, <a href="#">hdc1080</a>, <a href="#">gy-213v-hdc1080</a>, <a href="#">cjmcu</a>, <a href="#">cjmcu-1080</a>, <a href="#">texas instruments</a>, <a href="#">temperature</a>, <a href="#">humidity</a>, <a href="#">sensor</a>, <a href="#">i2c</a>, <a href="#">communication</a>, <a href="#">arduino</a>, <a href="#">code</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">LamaPLC: HTU TE Connectivity temperature/humidity sensors with I<sup>2</sup>C communication</a></li> </ul>	<p>2026/02/14 21:54</p>	<p><a href="#">htu</a>, <a href="#">htu31d</a>, <a href="#">htu21d</a>, <a href="#">htu20d</a>, <a href="#">sht20</a>, <a href="#">htu20</a>, <a href="#">sht21</a>, <a href="#">htu21</a>, <a href="#">si7021</a>, <a href="#">gy-21</a>, <a href="#">gy-213v</a>, <a href="#">hdc1080</a>, <a href="#">si702</a>, <a href="#">gy-20</a>, <a href="#">sht31</a>, <a href="#">htu31</a>, <a href="#">si7031</a>, <a href="#">gy-31</a>, <a href="#">te connectivity</a>, <a href="#">temperature</a>, <a href="#">humidity</a>, <a href="#">i2c</a>, <a href="#">communication</a>, <a href="#">sensor</a>, <a href="#">arduino</a>, <a href="#">code</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">LamaPLC: HX711 24-bit analog-to-digital converter (ADC)</a></li> </ul>	<p>2026/02/15 23:59</p>	<p><a href="#">hx711</a>, <a href="#">hx-711</a>, <a href="#">analog-to-digital</a>, <a href="#">adc</a>, <a href="#">converter</a>, <a href="#">load cell</a>, <a href="#">wheatstone bridge</a>, <a href="#">weight</a>, <a href="#">sensor</a>, <a href="#">communication</a>, <a href="#">arduino</a>, <a href="#">code</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: INA modules with Arduino libraries</a></li> </ul>	<p>2026/03/28 18:02</p>	<p><a href="#">i2c</a>, <a href="#">i c</a>, <a href="#">communication</a>, <a href="#">arduino</a>, <a href="#">energy</a>, <a href="#">power</a>, <a href="#">current</a>, <a href="#">monitor</a>, <a href="#">sensor</a>, <a href="#">ina219</a>, <a href="#">gy-219</a>, <a href="#">ina226</a>, <a href="#">gy-216</a>, <a href="#">ina228</a>, <a href="#">gy-228</a>, <a href="#">ina237</a>, <a href="#">ina238</a>, <a href="#">ina260</a>, <a href="#">ina3221</a>, <a href="#">ina</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: INA226 - current/voltage/power monitor with I<sup>2</sup>C communication</a></li> </ul>	<p>2026/02/14 23:58</p>	<p><a href="#">i2c</a>, <a href="#">i c</a>, <a href="#">communication</a>, <a href="#">arduino</a>, <a href="#">energy</a>, <a href="#">power</a>, <a href="#">current</a>, <a href="#">monitor</a>, <a href="#">sensor</a>, <a href="#">ina226</a>, <a href="#">ina219</a>, <a href="#">ina</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPlc: Industrial Ethernet (IE) Basic</a></li> </ul>	<p>2024/11/15 20:17</p>	<p><a href="#">communication</a>, <a href="#">bus</a>, <a href="#">ethernet</a>, <a href="#">industrial ethernet</a>, <a href="#">ie</a>, <a href="#">ethercat</a>, <a href="#">ethernet ip</a>, <a href="#">profinet</a>, <a href="#">powerlink</a>, <a href="#">sercos</a>, <a href="#">iii</a>, <a href="#">cc-link</a>, <a href="#">modbus tcp</a>, <a href="#">ieee</a>, <a href="#">rstp</a>, <a href="#">stp</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: LCD 1602/2004 with I<sup>2</sup>C communication</a></li> </ul>	<p>2026/02/14 17:27</p>	<p><a href="#">communication</a>, <a href="#">i2c</a>, <a href="#">display</a>, <a href="#">lcd</a>, <a href="#">1602</a>, <a href="#">2004</a>, <a href="#">hd44780</a>, <a href="#">pcf8574</a>, <a href="#">pcf8574t</a>, <a href="#">pcf8574at</a>, <a href="#">arduino</a></p>
<ul style="list-style-type: none"> <li>• <a href="#">lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC</a></li> </ul>	<p>2026/02/14 23:35</p>	<p><a href="#">communication</a>, <a href="#">arduino</a>, <a href="#">sensor</a>, <a href="#">energy harvesting</a>, <a href="#">energy</a>, <a href="#">ambient power</a></p>

• <a href="#">LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module</a>	2026/02/14 23:38	<a href="#">max30102</a> , <a href="#">max30100</a> , <a href="#">heart rate click</a> , <a href="#">sensor</a> , <a href="#">communication</a> , <a href="#">i2c</a> , <a href="#">arduino</a> , <a href="#">code</a>
• <a href="#">lamaPLC: MCP23017 / MCP23S17 16-Bit I/O Expander with Serial Interface I<sup>2</sup>C / SPI</a>	2026/02/14 22:52	<a href="#">communication</a> , <a href="#">i2c</a> , <a href="#">mcp23017</a> , <a href="#">mcp23s17</a> , <a href="#">spi</a> , <a href="#">i o expander</a> , <a href="#">serial</a> , <a href="#">cjmcu-2317</a> , <a href="#">cjmcu</a>
• <a href="#">LamaPLC: MH-Z19 series of NDIR CO<sub>2</sub> sensors</a>	2026/02/15 20:20	<a href="#">mh-z19</a> , <a href="#">mh-z19d</a> , <a href="#">mh-z19c</a> , <a href="#">mh-z19b</a> , <a href="#">mh-z19e</a> , <a href="#">ndir</a> , <a href="#">co<sub>2</sub></a> , <a href="#">sensor</a> , <a href="#">winsen</a> , <a href="#">uart</a> , <a href="#">pwm</a> , <a href="#">communication</a> , <a href="#">non-dispersive infrared</a> , <a href="#">infrared</a> , <a href="#">ir</a> , <a href="#">temperature</a> , <a href="#">arduino</a> , <a href="#">code</a> , <a href="#">tasmota</a>
• <a href="#">LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I<sup>2</sup>C communication</a>	2026/02/14 22:23	<a href="#">paj7620u2</a> , <a href="#">gy-paj7620</a> , <a href="#">pixart</a> , <a href="#">gesture recognition</a> , <a href="#">i2c</a> , <a href="#">communication</a> , <a href="#">sensor</a> , <a href="#">arduino</a> , <a href="#">code</a>
• <a href="#">lamaPlc: Profinet</a>	2024/11/15 20:39	<a href="#">communication</a> , <a href="#">bus</a> , <a href="#">profinet</a> , <a href="#">mrp</a> , <a href="#">rstp</a> , <a href="#">gsdml</a> , <a href="#">xml</a> , <a href="#">profibus</a> , <a href="#">ethernet</a> , <a href="#">tcp</a>
• <a href="#">lamaPLC: PTA8C04 4-channel PT100 Modbus Modul</a>	2026/02/14 17:42	<a href="#">pta8c04</a> , <a href="#">sensor</a> , <a href="#">modbus</a> , <a href="#">rtu</a> , <a href="#">rs-485</a> , <a href="#">communication</a> , <a href="#">platine</a> , <a href="#">um72</a>
• <a href="#">LamaPLC: S7-1500 and Metrawatt EM2389 Modbus TCP communication</a>	2024/11/18 17:55	<a href="#">simatic</a> , <a href="#">s7</a> , <a href="#">modbus</a> , <a href="#">communication</a> , <a href="#">metrawatt</a> , <a href="#">em2389</a> , <a href="#">source code</a> , <a href="#">scl</a> , <a href="#">mid</a>
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