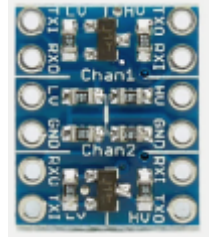


lamaPLC: Bi-Directional Logic Level Converter 3.3V ↔ 5V

The Two-Channel 5V to 3.3V Bi-Directional Logic Level Converter is a compact module designed to safely bridge communication between devices operating at different voltage levels, such as an Arduino Uno (5V) and a Raspberry Pi or 3.3V sensor.



Key Features

- **Bi-Directional Communication:** Automatically converts signals from 5V to 3.3V and vice versa on the same channel.
- **Protocol Support:** Optimised for [I²C](#) (IIC) as it manages the bidirectional data line (SDA) without needing manual direction control. It also supports [UART](#), [SPI](#), and [1-Wire](#) protocols.
- **Voltage Flexibility:** Although primarily used for 5V and 3.3V, many modules are compatible with 1.8V and 2.8V systems.
- **Compact Design:** Usually measures about 16mm x 13mm and is suitable for breadboard use.



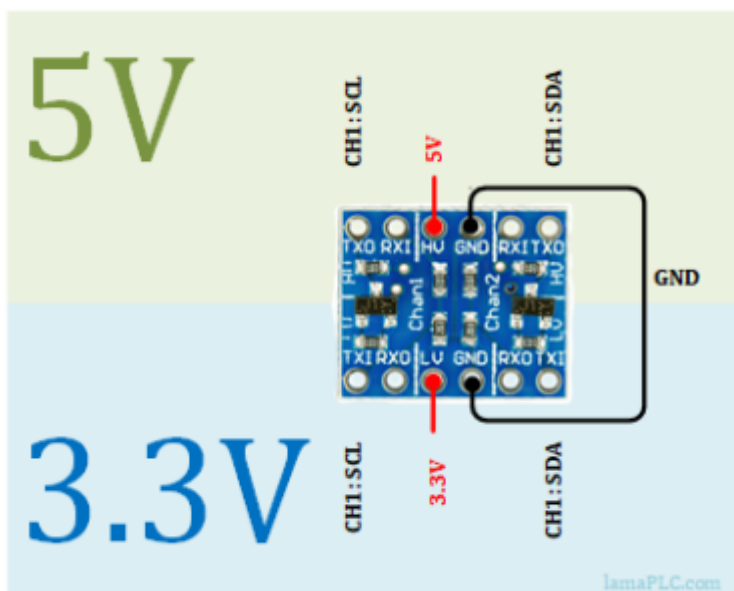
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2026/02/14 23:38

Typical Pinout and Wiring

The module is divided into a High Voltage (HV) side and a Low Voltage (LV) side. You must provide power references to both.



Pin Label	Connection
HV	5V Power Supply (High Voltage Reference)
LV	3.3V Power Supply (Low Voltage Reference)
GND	Common Ground (connect to both systems)
HV1 / HV2	5V side data lines (e.g., SDA/SCL from Arduino)
LV1 / LV2	3.3V side data lines (e.g., SDA/SCL to sensor)

Communication topics on lamaPLC

Page	Date	Tags
<ul style="list-style-type: none"> • ISM Band 	2026/04/23 21:51	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"> • lamaPLC Communication: 1-Wire 	2026/04/23 21:51	1-wire, communication, bus, microlan, i2c, uart, usart, ds18b20
<ul style="list-style-type: none"> • lamaPLC Communication: AS-i 	2026/04/23 21:51	bus, communication, as-i, basic, industrial ethernet, devicenet, interbus, manchester-ii, apm
<ul style="list-style-type: none"> • lamaPLC Communication: Bluetooth basic 	2026/04/23 21:51	communication, bus, bluetooth, ism, ieee, 802.15.1, ble, lmp, l2cap, rfcomm, iot, arduino, hc-05, hc-06
<ul style="list-style-type: none"> • lamaPLC Communication: CAN 	2026/04/23 21:51	communication, bus, can, canopen, most, automotive ethernet, sent sae-j2716, flexray, lin bus
<ul style="list-style-type: none"> • lamaPLC Communication: ControlNet 	2026/04/23 21:51	bus, communication, devicenet, cip, can, ethernet ip, ethernet, controlnet, mac, peer-to-peer, allen-bradley, rockwell automation, fieldbus, rg-6, coaxial cable

• lamaPLC Communication: DALI	2024/11/16 21:08	communication, rs-232, dali, light technic, diia, selv, manchester, asynchronous, half-duplex, serial, iec 62386, d4i, dali-2, dt6, dt8
• lamaPLC Communication: DASH7	2026/04/23 21:51	bus, communication, dash7, ism, srd, aes 128, d7a, blast, iot, rfid
• lamaPLC Communication: DeviceNet	2024/11/16 20:43	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 01:16	bus, communication, dmx512, dmx512-a, rs-485, xlr3, xlr5
• lamaPLC Communication: EtherNet/IP	2026/04/23 21:51	communication, ethernet, bus, ip, cip, ethernet ip, udp, industrial ethernet, ie, tcp, unicast, devicenet, controlnet, ieee 802.3
• lamaPLC Communication: GPS	2024/11/15 21:15	communication, satellite, navigation, gps, ocx, cdma, glonass, beidou, galileo, qzss, uart, arduino
• lamaPLC Communication: IEC 61850 basic	2026/04/23 21:51	1-wire, communication, bus, xml, iec 61850, iec, ethernet, scl, goose, ied
• lamaPLC Communication: InterBus	2024/11/16 01:46	bus, communication, interbus, phoenix contact, en 50254, iec 61158
• lamaPLC Communication: IoT	2026/04/23 21:51	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 ² C	2025/09/23 21:25	i2c, i c, smbus, philips, bus, communication, arduino
• lamaPLC Communication: KNX / EIB	2026/04/23 21:51	communication, bus, knx, knx tp, knx pl, knx rf, knx ip, eib, ehs, batibus, ethernet, ets
• lamaPLC communication: Matter	2026/04/23 21:51	communication, iot, matter, ethernet, tcp, udp, ipv6, thread, ble, cellular, wifi, pki, ip
• lamaPLC Communication: Modbus	2026/04/23 21:51	modbus, communication, bus, modicon, standard, rtu, tcp, multimaster, coil, register
• lamaPLC Communication: MQTT	2024/11/15 21:28	communication, mqtt, iot, tcp, udp, bluetooth, tcp ip, quic, mqtt-sn, oasis, message broker, mosquitto, qos, arduino, iso iec 20922
• lamaPLC Communication: NFC	2026/04/23 21:51	communication, nfc, rfid, bluetooth, ble, manchester, ask, iso iec 18092
• lamaPLC Communication: NRF24	2024/11/16 02:26	bus, communication, nrf24, ism, ism band, gfsk, rpd, arduino
• lamaPLC Communication: OPC	2024/11/15 21:33	communication, opc, scada, ole, net, xml, tcp, hmi, server, opc ua, opc ua client, mqtt, json, dcom, simatic, erp

- [lamaPLC Communication: PowerLink](#) 2026/04/23 21:51 [communication, bus, ethernet, tcp, udp, http, powerlink, fast ethernet, opensafety](#)
- [lamaPLC Communication: Profibus](#) 2026/04/23 21:51 [profibus, profibus pa, profibus dp, communication, fieldbus, bus, iec 61158, iec 61784-1, profinet, rs-485](#)
- [lamaPLC Communication: RFID](#) 2026/04/23 21:51 [communication, rfid, radio, rf, aidc, prat, arpt, arat, bap, uhf, nfc, em4100, t5557, tag, manchester, fsk, psk, biphas, nrz](#)
- [lamaPLC Communication: RS-232](#) 2026/04/23 21:51 [bus, communication, rs-232, rs, basic](#)
- [lamaPLC Communication: RS-422](#) 2026/04/23 21:51 [bus, communication, rs-422, rs, basic](#)
- [lamaPLC Communication: RS-485](#) 2026/04/23 21:51 [bus, communication, rs-485, rs, basic, profibus](#)
- [lamaPLC Communication: SCADA](#) 2026/04/23 21:51 [communication, scada, industry, industrial, hmi](#)
- [lamaPLC Communication: Sinec H1](#) 2026/04/23 21:51 [communication, bus, fieldbus, sinec-h1, s5, s7, simatic, siemens, industrial ethernet, ie, iec 8073](#)
- [lamaPLC Communication: SPI](#) 2026/04/23 21:51 [bus, communication, spi, basic, arduino, ssi, sdi, miso, sdo](#)
- [lamaPLC Communication: TCP / UDP Basic](#) 2025/11/20 22:49 [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 23:07 [bus, communication, matter, thread, matter over thread, zigbee, aes, ipv6, iot, 6lowpan, ethernet, wifi](#)
- [lamaPLC Communication: UART / USART basic](#) 2026/04/23 21:51 [bus, communication, uart, rs-232, rs-422, rs-485](#)
- [lamaPLC Communication: USB](#) 2026/04/23 21:51 [usb, usb otg, otg, msc, ums, mtp, dfu, uac, adc, communication, bus, basic](#)
- [lamaPLC Communication: Wi-Fi](#) 2026/04/23 21:51 [communication, iot, internet, wi-fi, wifi, ieee 802.11](#)
- [lamaPLC Communication: Wiegand](#) 2026/04/23 21:51 [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](#) 2024/11/16 00:36 [bus, communication, ws2812, ws2812b, ws 2812, ws 2812 b, 5050smd, 4020, 2020, 3535, 5050, nzc, rgb chip, led, arduino, rgb](#)
- [lamaPLC Communication: Z-Wave](#) 2026/04/23 21:51 [communication, ethernet, bus, ip, z-wave, ism](#)
- [lamaPLC Communication: Zigbee](#) 2026/04/23 21:51 [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	2026/03/22 03:14	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• lamaPLC: AI-Thinker LoRA products	2026/04/23 21:51	ai-thinker, lora manufacturer, communication, lora, modul, ra-01, ra-02, spi, arduino
• 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: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/03/28 23:50	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, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, cjmcu
• lamaPLC: CJMCU-164; SN74HC164D 8-bit Shift Register Module	2026/03/06 01:19	cjmcu-164, sn74hc164d, 8-bit shift register, communication, 7-segment, cjmcu, arduino
• 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: DPS Infineon Temperature/Pressure sensors with I ² C 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: Ebyte LoRA products	2026/04/23 21:51	ebyte, lora manufacturer, communication, lora, modul
• 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 I ² C communication	2026/04/23 21:52	ens160, sciosense, gas-quality, i2c, communication, sensor, arduino, code, eco ₂ , tvoc, aqi, indoor air quality, iaq, co ₂ , voc

<ul style="list-style-type: none"> • lamaPLC: ESP32 / ESP8266 	<p>2025/11/22 00:07</p>	<p>esp8266, esp32, esp32-c2, esp32-c3, esp32-c5, esp32-c6, esp32-c61, esp32-h2, esp32-s2, esp32-s3, esp32-p4, espressif systems, communication, ethernet, ip, wi-fi, thread, zigbee, matter, homekit, bluetooth, mqtt, adc, spi, uart, i2c, i2s, rmt, pwm, usb, usb otg, twai</p>
<ul style="list-style-type: none"> • LamaPLC: Gas sensors 	<p>2023/07/01 17:29</p>	<p>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</p>
<ul style="list-style-type: none"> • LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board 	<p>2026/04/23 21:52</p>	<p>ak8963, gy-9250, mpu-9250, 9-axis, motion detection, magnetometer, communication, i c, i2c, spi</p>
<ul style="list-style-type: none"> • LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication 	<p>2026/04/23 21:52</p>	<p>sht21, htu21, si7021, gy-21, gy-213v, hdc1080, gy-213v-hdc1080, cjmcu, cjmcu-1080, texas instruments, temperature, humidity, sensor, i2c, communication, arduino, code</p>
<ul style="list-style-type: none"> • LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C communication 	<p>2026/04/23 21:52</p>	<p>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</p>
<ul style="list-style-type: none"> • LamaPLC: HX711 24-bit analog-to-digital converter (ADC) 	<p>2026/04/11 18:28</p>	<p>hx711, hx-711, analog-to-digital, adc, converter, load cell, wheatstone bridge, weight, sensor, communication, arduino, code</p>
<ul style="list-style-type: none"> • lamaPLC: INA modules with Arduino libraries 	<p>2026/04/11 19:54</p>	<p>i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina219, gy-219, ina226, gy-216, ina228, gy-228, ina237, ina238, ina260, ina3221, ina</p>
<ul style="list-style-type: none"> • lamaPLC: INA226 - current/voltage/power monitor with I²C communication 	<p>2026/04/23 21:52</p>	<p>i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina</p>
<ul style="list-style-type: none"> • lamaPlc: Industrial Ethernet (IE) Basic 	<p>2026/04/23 21:51</p>	<p>communication, bus, ethernet, industrial ethernet, ie, ethercat, ethernet ip, profinet, powerlink, sercos, iii, cc-link, modbus tcp, ieee, rstp, stp</p>
<ul style="list-style-type: none"> • lamaPLC: LCD 1602/2004 with I²C communication 	<p>2026/02/14 18:27</p>	<p>communication, i2c, display, lcd, 1602, 2004, hd44780, pcf8574, pcf8574t, pcf8574at, arduino</p>
<ul style="list-style-type: none"> • lamaPLC: LTC3588 - Nanopower energy harvesting power supply IC 	<p>2026/04/23 21:52</p>	<p>communication, arduino, sensor, energy harvesting, energy, ambient power</p>
<ul style="list-style-type: none"> • LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module 	<p>2026/04/23 21:52</p>	<p>max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code</p>

• lamaPLC: MCP23017 / MCP23S17 16-Bit I/O Expander with Serial Interface I²C / SPI	2026/04/23 21:52	communication , i2c , mcp23017 , mcp23s17 , spi , i o expander , serial , cjmcu-2317 , cjmcu
• LamaPLC: MH-Z19 series of NDIR CO₂ sensors	2026/04/23 21:52	mh-z19 , mh-z19d , mh-z19c , mh-z19b , mh-z19e , ndir , co2 , sensor , winsen , uart , pwm , communication , non-dispersive infrared , infrared , ir , temperature , arduino , code , tasmota
• 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: Profinet	2026/04/23 21:51	communication , bus , profinet , mrp , rstp , gsdml , xml , profibus , ethernet , tcp
• lamaPLC: PTA8C04 4-channel PT100 Modbus Modul	2026/02/14 18:42	pta8c04 , sensor , modbus , rtu , rs-485 , communication , platine , um72
• LamaPLC: S7-1500 and Metrawatt EM2389 Modbus TCP communication	2026/04/23 21:52	simatic , s7 , modbus , communication , metrawatt , em2389 , source code , scl , mid
• LamaPLC: S7-1500 and Sicam Q200 Modbus TCP communication	2026/04/23 21:52	simatic , s7 , modbus , tia portal , communication , sicam , q200 , sicam q200 , source code , scl , class a
• lamaPLC: S7-1500 and UICPAL Temp.humi.sensor Modbus TCP communication	2023/06/19 23:24	bus , communication , s7 , simatic , s7 1500 , s7 1200 , scl , uicpal , temperature , humidity , modbus , example , download , tia portal
• 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: TCA9548A (HW617); Low-Voltage 8-Channel I²C Switch Module	2026/02/14 23:51	tca9548a , hw617 , i2c , switch , communication , expansion board , arduino
• 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: TWAI basics	2026/04/23 21:51	bus , communication , as-i , basic , can , twai , espressif , esp32
• 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 LoRA products](#) 2026/03/07 01:46 [waveshare, lora manufacturer, communication, lora, modul, usb-to-lora-xf02, core 1262, 1262, spi, arduino, rp2040-lora, rp2040](#)
- [LamaPLC: XTM35SC Modbus communication](#) 2024/08/18 16:52 [xtm35sc, modbus, modbus rtu, measuring, power, communication, current meter, voltmeter](#)
- [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](#)
- [Magnetic angle sensors](#) 2026/03/05 21:19 [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](#) 2026/02/14 18:49 [nt18b07, sensor, modbus, rtu, rs-485, communication, platine](#)
- [Simatic Modbus S7 error- and statuscodes](#) 2026/04/23 21:52 [communication, bus, modbus, error, modbus error code, 7000, 7001, 7002, 7003, 7004, 7005, 7006, 80a1, simatic, s7, siemens, tia](#)
- [Waveshare](#) 2026/04/23 21:52 [waveshare, converter, modbus, modbus rtu, modbus tcp, communication](#)
- [XTM35SC current / voltage meter](#) 2026/04/23 21:52 [xtm35sc, modbus, modbus rtu, measuring, power, communication, current meter, voltmeter](#)

Bi-Directional, Logic Level Converter, I2C, UART, SPI

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