lamaPLC: XGZP68xx: Silicon Pressure Sensors/Module

The **CFSensor XGZP68xx series** features high-performance silicon pressure sensors combined with an ASIC for calibration and temperature compensation.

Silicon pressure sensors typically use one of two main methods:

Piezoresistive: Resistors are placed on a thin silicon diaphragm. When pressure bends the diaphragm, the resistance changes, which is measured as a voltage.

Capacitive: Pressure changes the distance between two plates (one of which is a silicon diaphragm), altering the electrical capacitance.

The table below compares several well-known sensor types, which can be found on aliexpress.com or amazon.de:

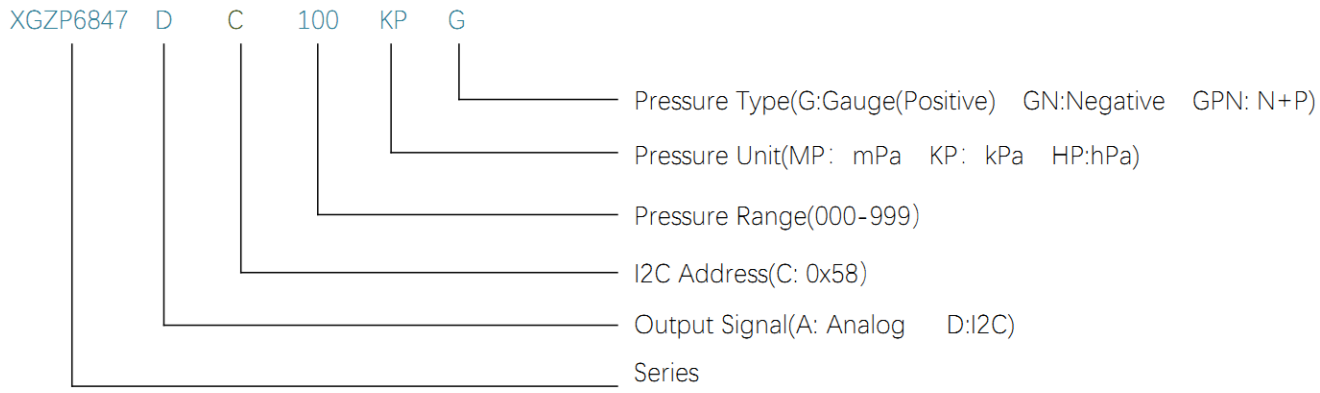
Sensor Type	Communication	Operating Range	Performance (Range/Type)	Efficiency	Special Properties
XGZP6810D	Digital I²C	3.0V – 5.5V	±125Pa / ±500Pa (Differential)	High-speed sampling	Ultra-sensitive; alternative to Sensirion SDP810.
XGZP6847D	Digital I²C	2.5V – 5.5V	-100kPa to 1500kPa (Gage)	~5uA sleep current	DIP6 package; widely used for blood pressure and appliances.
XGZP6857D	Digital I²C	3.3V or 5.0V	0–10kPa to 1000kPa (Gage)	Low power consumption	SOP6 package; compact footprint for consumer electronics.
XGZP6859D	Digital I²C	2.5V – 5.5V	0 to 200kPa (Vacuum/Gage)	Stable ratiometric output	Features a barb inlet pipe for secure tubing connections.
XGZP6887D	Digital I²C	3.3V or 5.0V	-100kPa to 1000kPa (Gage)	Calibrated /Compensated	J-lead SOP8 package; high reliability for industrial sensors.
XGZP6897D	Digital I²C	3.3V or 5V	-100kPa to 200kPa (Differential)	Optimized for I2C bus	Dual-port layout for measuring air flow or filter drop.
XGZP6899A	Analog	5V (Standard)	-100kPa to 700kPa (Differential)	Ratiometric (VCC dependent)	Provides calibrated analog signal for simple A/D inputs.

Key Selection Guide

- **For Arduino/ESP32:** Stick to the *"D"* models (Digital I²C) to avoid external ADC calibration and reduce wiring.
- **For Ultra-Low Pressure:** Use the XGZP6810D for sensitive tasks like HVAC air flow or medical ventilators.
- **For Liquid/Vacuum:** The XGZP6859D is specifically designed for vacuum detection with a barb inlet.
- **Analog Preference:** If your system lacks I2C, the XGZP6899A is the analog version of the 6899D.

Note: Always check the voltage suffix (e.g., 33 for 3.3V or 50 for 5.0V) to match your microcontroller logic levels.

XGZP6847: Fully calibrated silicon pressure sensor module



Note: Custom requirement or parameter(e.g pressure range, output etc,.), consult with CFSensor on Part Number.

XGZP6847D

The **XGZP6847D** is a fully calibrated silicon pressure sensor module designed for air and non-corrosive gases. It combines a MEMS pressure die with an integrated ASIC to provide direct digital readings via I²C, eliminating the need for complex external amplification or calibration.

Technical Specifications

- **Pressure Range:** Covers a vast span from -100kPa to 1500kPa (model-specific).
- **Accuracy:** Typically ±2% FSS (Full Scale Span) for ranges between 10kPa and 200kPa, and ±2.5% FSS for other ranges.
- **Resolution:** 21-bit for pressure and 16-bit for temperature readings.
- **Power Supply:** Operates between 2.5V and 5.5V DC, with a default test voltage of 3.3V.
- **Current Consumption:** Very low, typically around 1.8mA during active measurement and as low as 100nA in standby.
- **Temperature Compensation:** Calibrated for accurate performance between 0°C and +60°C.

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XGZP6897D: specialized differential pressure sensor

The XGZP6897D is a specialized differential pressure sensor designed to measure the difference between two air sources. It is widely used in airflow systems (such as Pitot tubes), HVAC filters, and medical ventilators.

Core Technical Specifications

- **Pressure Type:** Differential (compares pressure between two ports).
- **Pressure Range:** Extremely flexible, from ±0.5kPa up to ±200kPa.
- **Output:** 24-bit Digital (I²C interface) for pressure; 16-bit for temperature.
- **Accuracy:** Typically ±2% Span (for ranges >10kPa) or ±2.5% Span (for ranges <10kPa).
- **Power Supply:** Flexible 2.5V to 5.5V DC range.
- **Media:** Non-corrosive gases or dry air only.
- **Response Time:** Standard 20ms (10% to 90% step change).
- **Default Slave Address:** 0x6D

Pinout

- **Pin 2:** GND (Ground)
- **Pin 3:** SDA (I2C Data)
- **Pin 4:** SCL (I2C Clock)
- **Pin 6:** VDD (Power)
- **Note:** Other pins (1, 5, 7, 8) are usually NC (No Connection) or factory-specific.
- **Capacitor:** A 100nF decoupling capacitor between VDD and GND is required for stable readings.

Port Usage

- **P1 (High Port):** Connect to the higher pressure source.
- **P2 (Low Port):** Connect to the lower pressure source or leave open for Gage measurements.

I²C topics on lamaPLC

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• lamaPLC Communication: I²C	2025/09/23 21:25	i2c, i c, smbus, philips, bus, communication, arduino
• lamaPLC project: Sension SCD CO² measurement module	2026/04/15 19:34	scd30, scd40, scd41, iaq, ndir, sensor, i2c, arduino code
• 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: APDS - Avago ALS and proximity detection sensors with I²C 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	2026/04/23 21:52	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• lamaPLC: Bi-Directional Logic Level Converter 3.3V ↔ 5V	2026/04/12 00:34	bi-directional, logic level converter, i2c, uart, spi
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I²C 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: CJMCU-219/INA-219 breakout board/IC with I²C 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 I²C communication	2026/04/23 21:52	cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication
• 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: 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: DPS Infineon Temperature/Pressure sensors with I2C communication	2026/04/23 21:52	dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code
• 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: ESP32 / ESP8266	2025/11/22 00:07	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
• 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: GY-511 6DOF sensor module	2026/03/22 01:44	stmicroelectronics, lsm303dlhc, i2c, lsm303, sensor, gy-511, 6dof, pololu, module, arduino
• LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board	2026/04/23 21:52	ak8963, gy-9250, mpu-9250, 9-axis, motion detection, magnetometer, communication, i c, i2c, spi
• 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: HT16K33 display controller	2026/04/23 21:51	i2c, 7-segment display, display, ht16k33, arduino
• LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C 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: INA modules with Arduino libraries	2026/04/11 19:54	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 I²C communication	2026/04/23 21:52	i2c, i c, communication, arduino, energy, power, current, monitor, sensor, ina226, ina219, ina
• lamaPLC: LCD 1602/2004 with I²C communication	2026/02/14 18:27	communication, i2c, display, lcd, 1602, 2004, hd44780, pcf8574, pcf8574t, pcf8574at, arduino
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/04/23 21:52	max30102, max30100, heart rate click, sensor, communication, i2c, arduino, code
• 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: MLX90614 (GY-906) infrared non-contact thermometer	2026/05/08 00:03	communication, i2c, temperature, mlx90614, gy-906, modul, infrared, non-contact thermometer, dsp, pwm, smbus, hailege
• lamaPLC: PCF857x I/O Expander chip/modul with I²C communication	2026/05/14 15:21	communication, i2c, pcf857x, pcf8574, pcf8574a, pcf8575, i o expander, i o extension, nxp, texas instruments
• 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: RP2040_ETH_Modul: I²C scanner	2026/05/12 16:20	code, micropython, 2026, rp2040 eth, i2c, comunication
• lamaPLC: RP2040_ETH_Modul: MLX90614 simple	2026/05/12 17:06	code, micropython, 2026, rp2040 eth, i2c, communication, mlx90614
• 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: SC16IS750 / SC16IS752: One or two serial (UART) ports from microcontroller via I²C or SPI communication	2026/04/23 21:52	cjmcu-750, cjmcu-752, cjmcu, nxp, sc16is750, sc16is752, uart, serial, i2c, spi, modul, converter, arduino, code
• 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: Signal level converters	2026/02/14 23:47	pca9306, i2c, voltage, level, converter
• lamaPLC: TCA9548A (HW617); Low-Voltage 8-Channel I²C Switch Module	2026/02/14 23:51	tca9548a, hw617, i2c, switch, communication, expansion board, arduino
• lamaPLC: TM1637 7-segment display	2026/02/14 18:26	i2c, 7-segment display, display, tm1637, arduino
• 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: 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: 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

• 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
• SSH1106/SSD1306 OLED Display with I²C communication	2026/02/14 18:27	i2c, oled, display, ssd1306, sh1106, ssh1106, arduino, cmos

communication, i2c, sensor, modul, pressure, CFSensor, XGZP68xx, XGZP6810D, XGZP6857D, XGZP6859D, XGZP6887D, XGZP6897D, XGZP6899A, piezoresistive, capacitive

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