TA120 Noise measuring sensor for Smart Cities

DATASHEET

D_TA120_v0013_20220610_EN

*Optional

Noise has become an essential vector when sensing smart cities.

CESVA's more than 45 years of experience designing and manufacturing sound level meters are concentrated in the TA120 noise measuring sensor.

The TA120 brings together in a small sized single piece of equipment, the accuracy of a Class 1 sound level meter, maximum protection of a professional outdoor kit (rain, snow, wind, dust, birds, IP65) and full connectivity with major open source platforms and industrial protocols.

The TA120 requires minimal annual maintenance and can be verified with an acoustic calibrator (IEC 60942).

The TA120 offers you high precision and reliability noise measurements.

NoisePlatform

APPLICATIONS

- Smart Cities sensing
- Noise surveillance networks (permanent monitoring):
  - Road and port infrastructures
  - Industrial activities
  - Separate waste collection routes
  - Control of Works
- Noise monitoring:
  - Concerts, festivals, major events and exhibitions
  - Sports events and racetracks
  - Quiet areas (acoustically protected)
- Generating noise maps and displaying in real time noise levels

MAIN FEATURES

- Class 1 precision sensor according to IEC 61672-1.
- Protection against external agents with an outdoor kit: wind, rain and birds. Keeps class 1 precision. IP65 protection.
- Can be fully integrated into different platforms: NoisePlatform (CESVA), open source ones such as Sentilo or proprietary platforms like Telefónica or Smarty Planet.
- Light weighted small sized and easy to install in street lights, marquees, billboards, shelters, kiosks and advertising posts.
- Powered by mains, POE (Power over Ethernet), 12 VDC (Solar panels*, external batteries).
- Continuous measurement 24 h/7 days a week.
- Minimum annual maintenance. Materials used in the manufacture of TA120 ensure a long life.
- Removable outdoor kit for quick verification and adjustment with an acoustic calibrator (IEC 60942).
- Network with unlimited number of sensors
- Communication by Ethernet (RJ45), Wi-Fi*, 2G/GPRS or 3G modem*, 4-20 mA loop*.

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TECHNICAL SPECIFICATIONS

**Optional*
***Integration times shorter than 10s require high-speed networks*

NOISE MEASUREMENT ACCORDING TO IEC 61672

DETECTOR: Equivalent continuous sound level and Fast and Slow time weighted sound level

FREQUENCY WEIGHTING: A and C

MEASURED FUNCTION: Equivalent level with frequency weighting A and C with programable integration time from 1s to 60 min: LAeqT, LCeqT. Maximum time weighted level with fast and slow time weighting over a programable time from 1s to 60 min with frequency weighting A: LAFmaxT, LASmaxT

RESOLUTION	0.1 dB
ACCURACY according to IEC 61672-1:	class 1
MEASUREMENT SINGLE RANGE from noise:	28 to 120 dBA
LINEARITY RANGE at 1kHz :	35 to 120 dBA
MEASUREMENT SINGLE RANGE from noise:	35 to 120 dBC
LINEARITY RANGE at 1kHz :	42 to 120 dBC
ACOUSTIC VERIFICATION:	with acoustic calibrator (IEC 60942)

MICROPHONE

TYPE:	½" condenser microphone
POLARIZATION:	0 V
NOMINAL SENSITIVITY:	25.0 mV/Pa

PROTECTION AGAINST EXTERNAL AGENTS

OUTDOOR KIT:
PROTECTION AGAINST: Rain, snow, wind and birds

DEGREE OF PROTECTION PROVIDED BY THE ENCLOSURE:
IP65

CONNECTIVITY

USB COMMUNICATION for configuration:
TYPE: Digital complies with USB rev. 2.0 (type B)

ETHERNET COMMUNICATION for data transmission:
PORT: RJ45, 10/100 Mbps

4-20 mA CURRENT LOOP:
CL120 module* required
TYPE: Analog

2G/GPRS o 3G COMMUNICATION for data transmission:
MR120* or MR123 module* required (micro SIM)

Wi-Fi COMMUNICATION for data transmission:
WF120 module required*

TRANSMISSION PROTOCOLS

PROTOCOL :	HTTP, HTTPS (secure connection)
IP ADDRESS:	Dynamic (DHCP) and Static
FORMAT :	Sentilo JSON, Ultralight 2.0, Others (consult)

REMOTE CONTROL

FEATURES: Remote configuration of the sensor
Automatic firmware update (though OTA)

POWER

MAINS: 100/240 V~ 0.6 A | 50/60 Hz

TYPICAL POWER CONSUMPTION:	1 W
POWER CONSUMPTION charging BA120*:	18 W

URBAN LIGHTNING NETWORK: BA120 battery* required
Powering form the urban lightning network with battery support.

PoE (Power Over Ethernet):
Uninterrupted power through the Ethernet cable.

12VDC INPUT:
Powering form 12 V external batteries and solar panel PS120* (BA120 Battery* required):

TYPICAL POWER CONSUMPTION:	1 W
POWER CONSUMPTION charging BA120*:	15 W

ENVIRONMENTAL CRITERIA

INFLUENCE OF THE TEMPERATURE:

CORRECT NOISE MEASUREMENT RANGE:	-10 to +50 °C
RANGE FOR CORRECT CHARGING AND DISCHARGING OF THE BATERY*:	0 to +40 °C

INFLUENCE OF THE HUMIDITY:

CORRECT NOISE MEASUREMENT RANGE:	25 to 90 %

DIMENSIONS, WEIGHTING & MARKING

DIMENSIONS:	395 x 120 x 91 mm
WEIGHT:	without battery 960 g with battery* 1150 g
MARKING:	MARK CE , WEEE MARK

OPTIONS*:

WF120	Module for data transmission Wi-Fi
MR120	Module for data transmission 2G/GPRS
MR123	Module for data transmission 3G
CL120	Analog output for 4-20mA current loop
BA120	Internal lithium battery for 24h cycles
PS120	Solar panel kit (BA120 Battery* required)

The characteristics, technical specifications and accessories may vary without prior notice