

Technical data sheet

Universal audio signal encoder



Identification

Type	SUS-6004 DC 24-110V
Part No.	826004.00

Product version

Hardware revision	C
Software version	2.10
Datasheet version	04

Use/Application/Properties

Description	Audio signal encoders for rail applications
-------------	---

Technical data

Nominal voltage range	DC 24 V – 110 V
Voltage range	DC 16.8 V – 137.5 V
Rated current (at U_N)	5 mA – 200 mA at $U_N = 24$ V
Frequency bandwidth	250 Hz – 10000 Hz
Sound pressure level	min. 90 dB (at a distance of 30 cm)
Max. audio duration	Up to 4 minutes at a sample rate of 8 kHz and 4-bit ADPC compression, max. 1MB (this value must not be exceeded)
Volume control	Configurable in 8 steps or infinitely adjustable via potentiometer S1 Recommended adjustment tool: Screwdriver 2.5 mm × 0.4 mm
Technology	Broadband loudspeaker
Operation temperature range	-40 °C ... +70 °C (+85 °C 10 min)
Storage temperature range	-40 °C ... +85 °C

Inputs

Number	6 binary coded digital inputs, enabling a max. of 63 messages
Current Consumption	approx. 2.5 mA @ 24 V – 110 V
Debounce time	Configurable 10 ms – 200 ms in steps of 10 ms

Lütze Transportation GmbH

Postfach 12 24 (PLZ 71366) • Bruckwiesenstraße 17-19 • D-71384 Weinstadt
Tel. +49 (0)7151 6053-545
www.luetze-transportation.com • sales.transportation@luetze.de

Technical data sheet

General

Dimensions (w × h × d)	104.0 mm × 79.0 mm × 45.5 mm
Weight/unit	0.28 kg
Connection type	X1: Spring terminal single stranded 0.14 mm ² – 2.5 mm ² , spring terminal fine stranded 0.14 mm ² – 2.5 mm ² m2 X2: connection tab 6.3 × 0.8 mm Stripping length: 11 mm Screwdriver: 3.5 × 0.6 mm

Environmental service conditions

Altitude	2000 m
Operating temperature class	OT4: -40 °C ... +70 °C
Switch-on extended Operating temperature class	ST1: OTx + 15 °C
Temperature variation class	H1:no requirements
Shock/Vibration	Category 1, class B
Class of supply voltage interruption	S2: 10 ms
Supply change-over class	C1: 100 ms
Useful life class	L4: 20 years
Degree of pollution	PD2
Over voltage category	OV2
Socket and edge connector	K2: Sockets for ICs and/or edge connectors are not used
Protective coating class	PC2: lacquered on both sides
Degree of protection	IP20

Failure Rate Prediction (MTBF)

Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at -40 °C	288 fit
Failure rate at +45 °C	1479 fit
Failure rate at +45 °C	675979 h
Failure rate at +70 °C	4021 fit
	1 fit equals one failure per 10 ⁹ component hours The indicated temperature is the mean component ambient temperature.
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances. Continuous operation 8760 h per year.

Technical data sheet

Standards/Certifications

Standards

EN 50155:2021: Railway applications – Rolling stock – Electronic equipment – only testing according to chapter 13.3

EN 50155:2007: Railway applications – Rolling stock – Electronic equipment

EN 50121-3-2:2016+A1:2019: Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus

EN 50124-1:2017: Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment

EN 61373/AC:2017: Railway applications – Rolling stock equipment – Shock and vibration tests

EN 61373:1999: Railway applications – Rolling stock equipment – Shock and vibration tests

EN 61373:2010: Railway applications – Rolling stock equipment – Shock and vibration tests

EN 45545-2:2020: Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components

Equipment/Spare parts

Accessories

Programmer part number 826900

Notes and Comments

Comments

GND potential of the digital inputs:

The supply voltage (X1.1/X1.2) and the digital inputs (X1.3–X1.8) must have the same ground potential (GND).

Volume variation: The volume can be set different for each signal tone

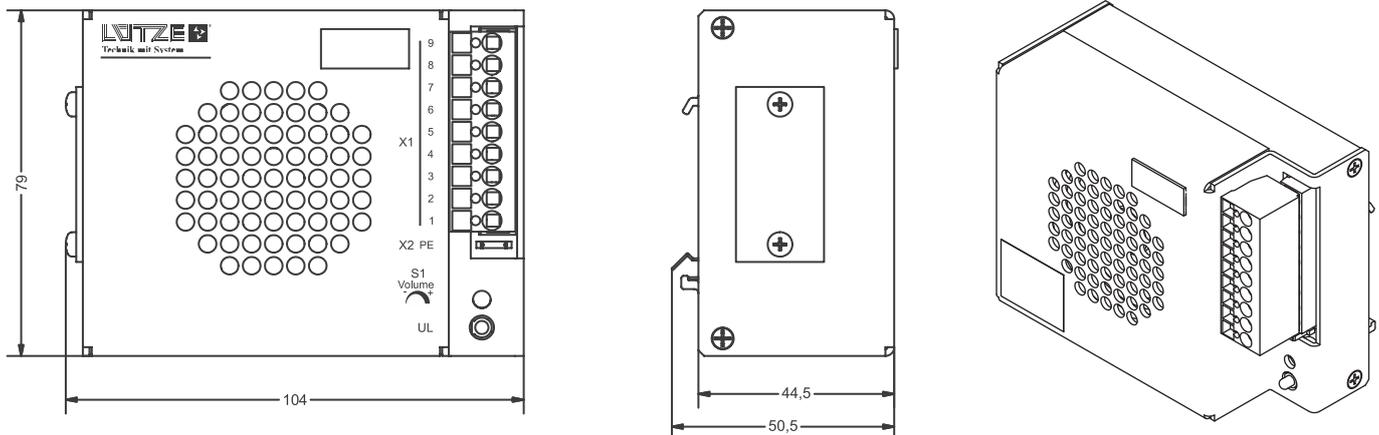
Customer specifications:

The audio files and the input configuration (truth table) must be specified by the customer

Supported audio formats: *.WAV (16 bit / mono)

CAUTION: The memory capacity of 1MB must not be exceeded! Exceeding this limit will destroy the device!

Dimensions



Connection assignment

(X1)

Pin	Function
1	Supply Voltage Vss (GND)
2	Supply Voltage Vdd
3	Input 1 (IN1)
4	Input 2 (IN2)
5	Input 3 (IN3)
6	Input 4 (IN4)
7	Input 5 (IN5)
8	Input 6 (IN6)
9	Status Output (Do not connect. For production purposes only.)

(X2)

PE