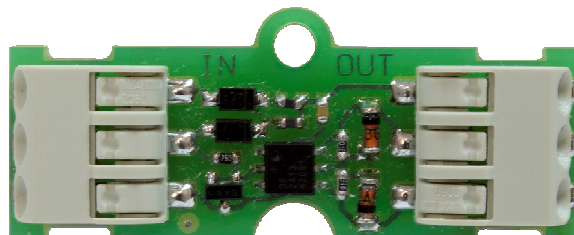# 1-wire PUZZLE - 2 Universal Digital Inputs / Outputs

With PUZZLE you can interconnect regular binary sensors with 1-wire fieldbus or use the device as digital output to control relays/contactors. By pairing the PUZZLE with LogicMachine, you can finish the installation in very cost-effective way. Up to 64 PUZZLE can be connected to one 1-wire port of LogicMachine and all objects can be then managed from any of KNX, Modbus, BACnet etc. devices.

ENG - Data sheet
Issue date 17.06.2015

Application

Sensor, Actuator

Types of product

PUZZLE   1-wire Universal 2 Digital Inputs / Outputs device

Standards and norms compliance

CE conformity: EMBS-CE-110926/01   Electromagnetic compatibility

EMC: EN61000-6-1
                        EN61000-6-3
PCT   Certificate

Technical data:

Power supply: Power over 1-wire bus   Up to 20 devices
                        5 V power from
                        LogicMachine   Up to 100 devices
                        Max power on IN+   Up to 30 V DC

Interface:	Universal Inputs/Outputs	2
Clamps:	Inputs/Outputs	0.75mm2

Color:	Black
Dimensions:	15(W)x44(H)x7(L) mm
Usage temperature:	0C ... +55C
Storage temperature:	-20C ... +70C
Weight:	50g

⚠️ **Caution**

Security advice

The installation and assembly of electrical equipment may only be performed by skilled electrician. The devices must not be used in any relation with equipment that supports, directly or indirectly, human health or life or with application that can result danger of people, animals or real value
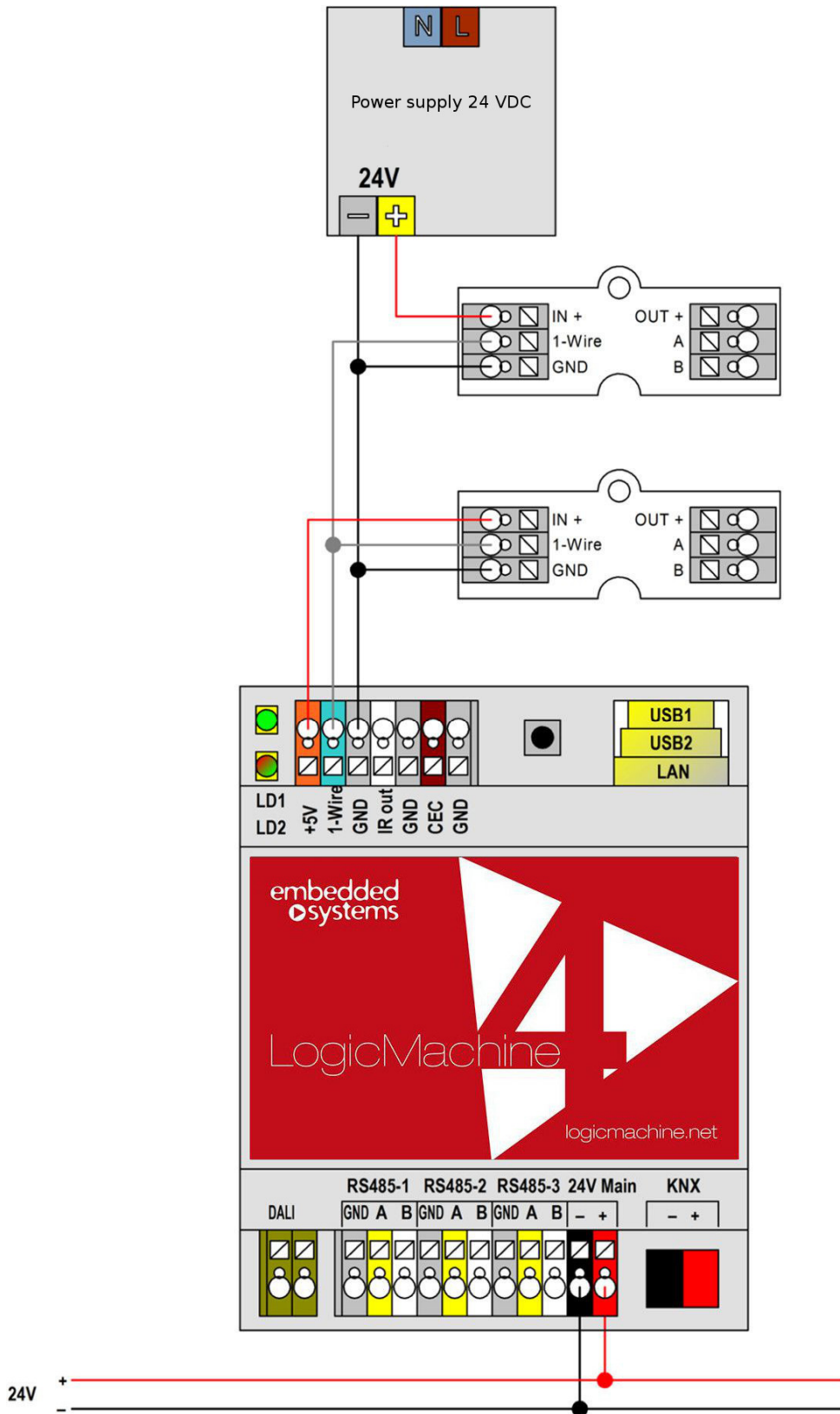
Mounting advice

The devices are supplied in operational status. The cables connections included can be clamped to the housing if required.
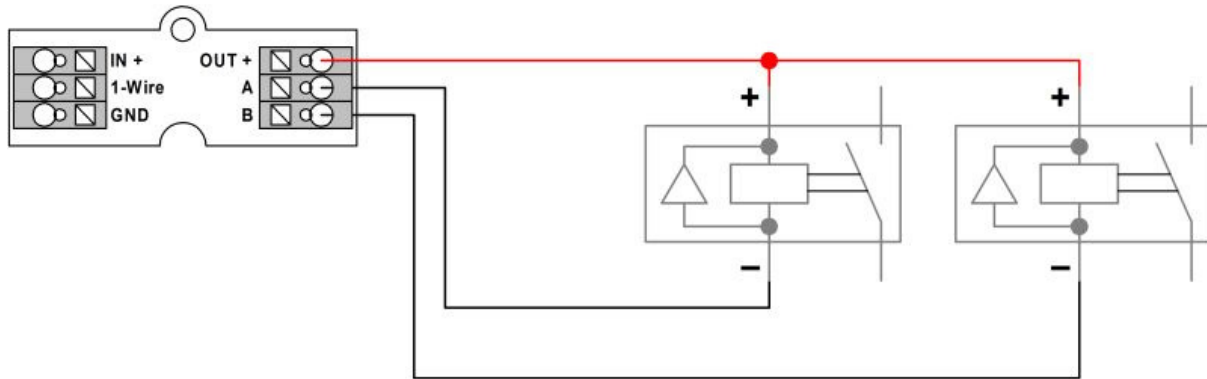
Electrical connection

The devices are constructed for the operation of protective low voltage (SELV). Grounding of device not needed. When switching the power supply on or off, power surges must be avoided.
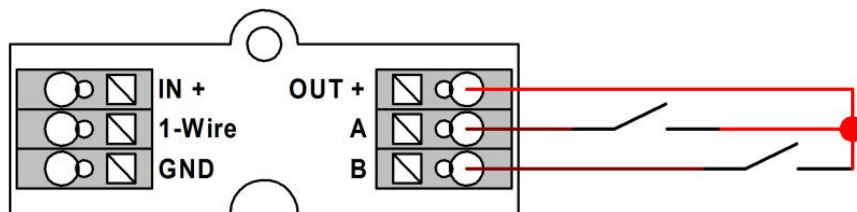
Powering Puzzle
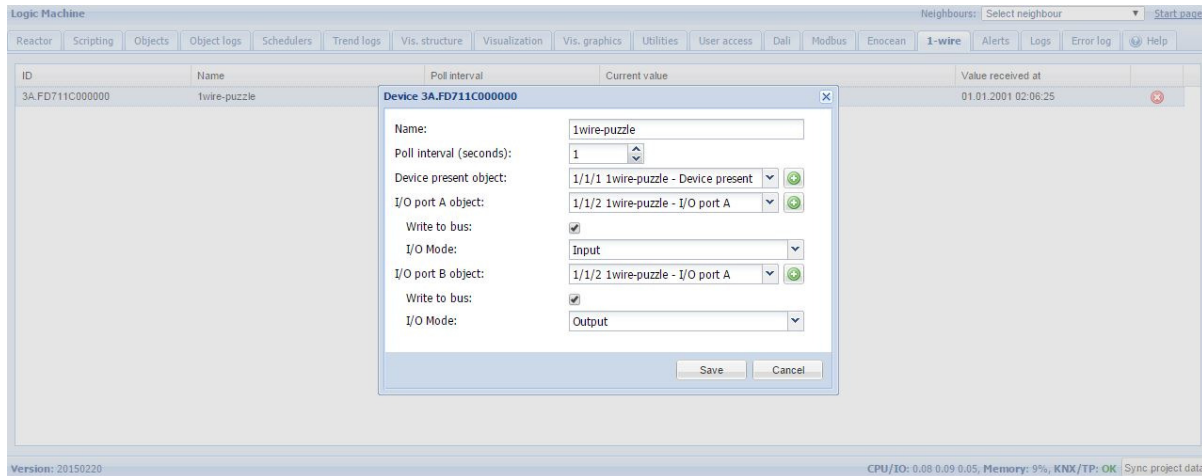
Puzzle interconnection with external relay

Puzzle interconnection with binary input

LogicMachine Puzzle configuration

Once PUZZLE is connected to LogicMachine over 1-wire fieldbus, it will appear in *1-wire* tab. Here you can choose port configuration and do mapping to KNX group addresses.

Name – name of the 1wire device
Poll interval – polling interval in seconds
Device present object – KNX grp address to map the presence of the device
I/O port A object – KNX grp address to map first port of the device
I/O port B object – KNX grp address to map second port of the device
Write to bus – defines either to send telegram to KNX bus or not
I/O mode – define either the port acts as Input or Output

About 1-wire

1-wire is a bus technology which is built based on client-server topology and allowing to connect up to 100 devices to one controller. It is either 2-wire or 3-wire bus installation. In case of 2-wire system, a parasitic powering is used directly from the bus, normally up to 20 devices can work in this way. In case of bigger amount of 1-wire sensors, you can use LogicMachine 5V DC output to power 1-wire devices.

Advantages of 1-wire over KNX:

- No need in ETS
- Very cost-effective
- You can use the same wiring as KNX does and connect all standard sensors

Advantages of 1-wire over resistive sensors:

- Substantial savings on equipment
- Easier connection diagram allows to reduce the complexity of laying wiring
- Extension possibility: connection of additional sensors without changing basic wiring

- Ability of remote monitoring of sensors (open circuit, short circuit etc.)
- No need to take into account the resistance of conductors like in the circuit with resistive sensors

1-wire connection diagrams: