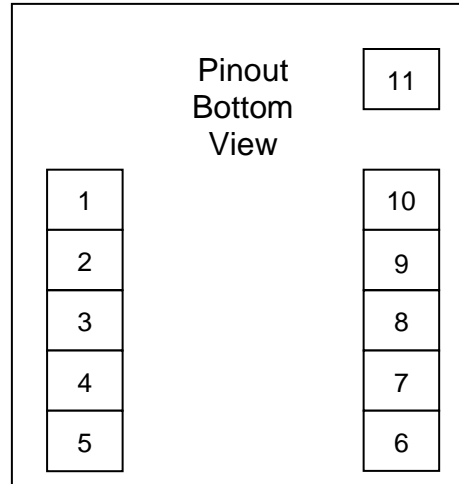
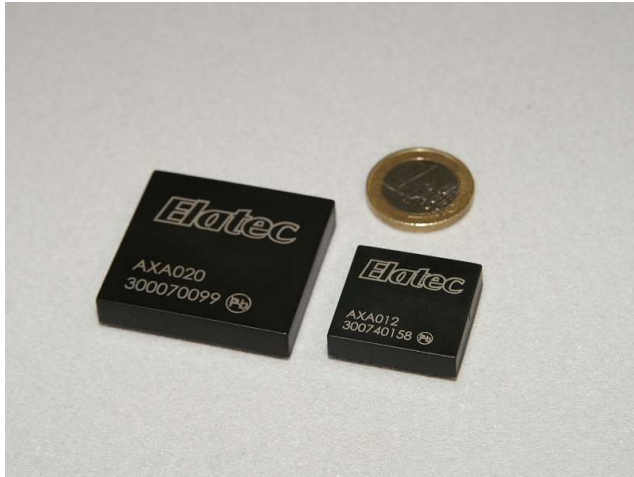


### Low Cost Transponder Reader



The reader modules AXA012 and AXA020 are low cost, read only transponder readers.

AXA012 and AXA020 come with internal antennas, and perform read ranges of up to 12cm respectively 16cm. Both readers support serial ASCII and Wiegand 26 data protocol.

#### Technical data:

Parameter	AXA012	AXA020
Read range	Up to 12cm	Up to 16cm
Typical dimensions [mm]	25 x 26 x 6.1	38 x 40 x 7
RF-Frequency	125 kHz ± 2.5 kHz at room temperature	
Supported transponders	EM4100 or compatible	
Encoding	Manchester 64-bit, RF/64	
Typical current consumption	25mA	
I/O output current	10mA Source, 10mA Sink	
Voltage supply range	4.6V - 5.5V	
Communication parameters	9600 Baud, 8 databits, no parity, 1 stopbit	

## Pinout:

Pin	Description	Serial ASCII	Wiegand
1	Power supply 0V	0V for power supply and second connection for tuning capacitor	
2	Reset input	Low active, strap to +5V if not used	
3, 4	Antenna	Please leave these pins unconnected	
5, 6	N/C	Please leave these pins unconnected	
7	Serial ASCII / Wiegand	Strap to GND	Strap to +5V
8	Data1/TX	Serial ASCII, high active	“one” output, low active
9	Data0/TX-	Serial ASCII, low active	“zero” output, low active
10	Signal	3.1 kHz burst, active high	
11	Power supply +5V	Positive supply input	

## Data Structure of Serial ASCII Format

STX (02H)	DATA (10 ASCII)	CHECKSUM (2 ASCII)	CR	LF	ETX (03H)
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Two hexadecimal ASCII characters represent 1 data byte. Checksum is the “Exclusive OR” of the 5 data bytes.

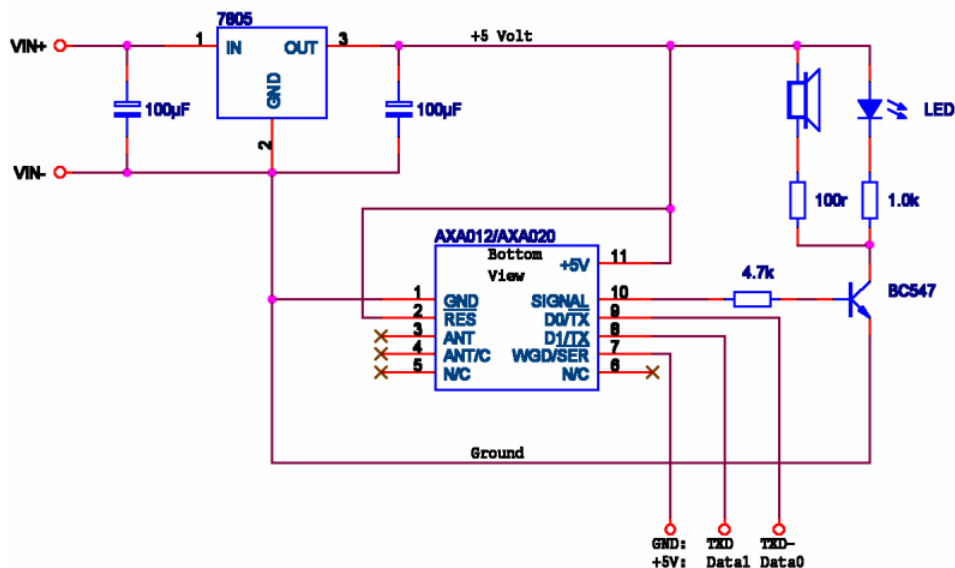
## Data Structure of Wiegand 26 Format

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
P	E	E	E	E	E	E	E	E	E	E	E	E	O	O	O	O	O	O	O	O	O	O	O	O	P
Even parity													Odd parity												

P = Parity Start Bit and Stop Bit

The Wiegand 26 protocol transports 24 data bits. The upper 16 bit of an transponder ID, which has 40 bits, are truncated.

## Sample schematic:



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