GP60

Data Sheet on July 20, 2000 Version 3

The GP60 is a high performance proximity reader featuring long range and auto tuning. The unit will run from any voltages from 6.5 to 13.5 VDC, making it suited to a wide variety of applications, including access control.

Features

- Long Read Range
- Compact and Stylish Case
- Auto Tuning for ease of installation
- 6.5-13.5 Volts DC Working
- Low Power
- Customer Relay (upon request)
- Interface control for Sounder
- Low Cost
- Encapsulated for Environmental protection
- Strong ABS glass filled case

Specification

Power Requirements	6.5-13.5 Volts regulated DC , typical 120 mA @ a 12V supply. A linear regulator is recommended.
Interface	Wiegand, Magstripe, 9.6K Baud Serial ASCII (RS232) or special to customer specifications.
Typical Read Range	Up to 45cm @6.5V Up to 60 cm @12V with ISO card
Frequency	125KHz standard or 134.2KHz to special order.
Transponder	Read only 64 bits, Manchester encoded
Card ID	40 bits giving > Billion combinations
Tuning	Integral Auto Tune (fixed frequency 125kHz)
Visual\Audio Indication	Beeper, Read LED, Auxiliary LED, Relay LED, Power LED
Customer Relay	Sturdy 10A 24VDC – Limited to 2 Amperes by cable.
Case	Very Strong Glass filled ABS
Dimensions	210 x 210 x 28 mm
Nominal Weight	850g
Temperature Range	-10 to 60 Deg C.
Interface Cable	90cm.

Cable Assignment

Red   Power 6.5-13.5 Volts
Black   Power 0 Volt
White   Magstripe clock & Wiegand1, with internal 4K7 pull up
Green   Magstripe data & Wiegand0, with internal 4K7 pull up
Orange   Card Present Output with internal 4K7 pull up
Yellow   Program Input
Blue   Data Out RS232
Brown   Data In RS232

Auto Tuning

The auto tune function takes place upon power up. A flashing LED indicates the tuning function is in progress. When completed this LED stays on. An auto tune fail is indicated by the Auto tune LED continuously flashing. |

Installation

The GP60 are state of the art readers and should provide good service however there are a few tips when worth following during installation.

Try to position the GP60 away from power wiring or against solid metal objects as these can reduce read range. Computer monitors can cause interference and may affect the range especially if they are used in DOS mode. Other RFID readers can also cause interference, especially those from different manufacturers. Generally GIGA group readers and modules can work in relatively close proximity to each other, how close will be left to individual trial.

An auto tune fail can occur if the reader antenna is burdened by for example fixing it to a solid steel plate. In this case the auto tune LED will flash continuously. If this occurs stand it off surface 2 inches or move reader to another location.

Interface Commands

The GP60 has a few simple command functions. The onboard relay and the onboard sounder are controllable over the RS232 interface obviating the need for a local controller in some cases. The control codes are given below.

Relay off, Aux1 LED Off   C0
Relay on   C1
Reserved   C2
Aux1 LED on   C4
Beeper on and Reset Aux1 LED   C8

(Note : Type the codes in capital letters)

Output Format

The output format can be customer programmed. The available formats are Wiegand, Magnetic Emulation and Serial ASCII (RS232)

Wiegand		**Magstripe**	
Red	Power +V	Red	Power +V
Black	Ground 0V	Black	Ground 0V
White	Data1	Green	Data
Green	Data0	White	Clock (Strobe)
Yellow	Connect to White	Orange	Card Present
Orange	No Connection	Yellow	Connect to Orange
Blue	No Connection	Blue	No Connection
Brown	No Connection	Brown	No Connection

Serial ASCII (RS232)	
Red	Power +V
Black	Ground 0V
Yellow	No Connection
White	No Connection
Orange	No Connection
Green	No Connection
Brown	RX Data
Blue	TX Data

Data Structure (Serial ASCII)

Baud Rate: 9600, N, 8,1

STX(02 HEX)	DATA(10 HEX CHARACTERS)	CR	LF	ETX(03 HEX)

The start character is factory defined as an 'STX' (02 HEX). This is followed by 10 Hex characters of data. The CR\LF characters serve to bring the received screen text back to the left hand side and on the line below after the data bytes have been sent. The 'ETX ' (03 HEX) character denotes the end of the current transmission.

Data Structure (Magstripe Emulation, ABA Track 2)

Speed : Simulated to 38 IPS (Inches per Second)

10 LEADING ZEROS	SS	DATA (14 DIGITS)	ES	LRC	10 TRAILING ZEROS

The 10 leading zeros prepare the receiving unit to accept the data. The data is 14 digits long. SS is the Start Sentinel consisting of 11010. ES is the End Sentinel consisting of 11111. LRC is the Longitudinal Redundancy Check character. Lastly there are 10 trailing zeros. Magstripe 8 digits and 6 digits are available for special request.

The hexadecimal data from the card is first converted to a denary string before transmission. For example, a card containing the hexadecimal data (0411115EA6) , will be converted to denary and sent as denary **00017466220198** (14 digits)
The calculation is performed as follows.

$$(6 * 16^0 + 10 * 16^1 + 14 * 16^2 + 5 * 16^3 + 1 * 16^4 + 1 * 16^5 + 1 * 16^6 + 1 * 16^7 + 4 * 16^8)$$
= 00017466220198

Data Structure (Wiegand Format-26 Bit)

0	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
P	S	S	S	S	S	S	S	S	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P
P	E	E	E	E	E	E	E	E	E	E	E														
													O	O	O	O	O	O	O	O	O	O	O	O	P
SUMMED FOR EVEN PARITY (E)													SUMMED FOR ODD PARITY (O)												

Note:

P	Parity (Even or Odd) Start Bit and Stop Bit
S	Site Bits from Card or Reader
C	Card Data
SYRDSSW1-W26	Site bits from Card (24 bits Card Data)
MSB	Normal 01
LSB	Normal 24

PROGRAMMING THE OUTPUT FORMAT

The programming input may be connected in the following ways to choose between the available output formats.

1) Serial ASCII	Leave Program Input Open Circuit
2) Wiegand	Connect Program Input to Clock Output
3) Clock Data**	Connect Program Input to Data Output
4) Magnetic Emulation	Connect Program Input to Card Present

**(To special order only - Minimum order 100)