

CON100iB Multiply Interface Converter

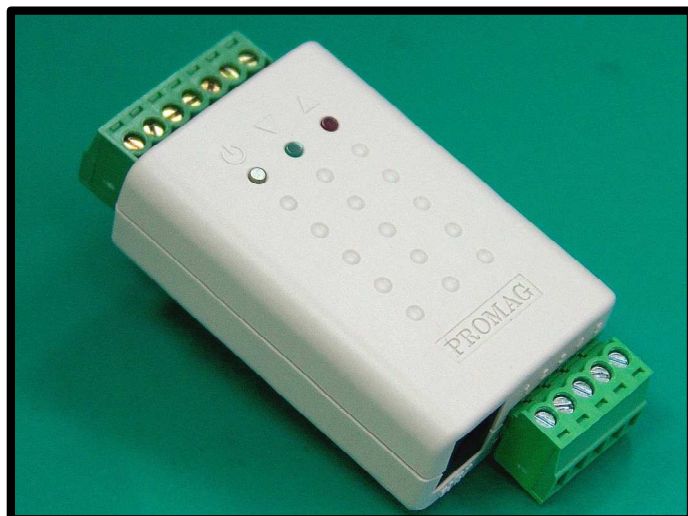
with iButton

INTRODUCTION

The CON100iB can be used to convert commonly used data formats to Clock & Data(MSR), RS232 or Wiegand format data.

FEATURES

- Converts from Wiegand, RS232, Clock & Data (MSR) or Dallas iButton™ format.
- Converts to RS232, MSR or Wiegand format.
- Can convert to or from Wiegand with up to 64 bits of data, including up to 64 bit site code plus optional start and end parity bits.
- User programmable setting by software when converting to Wiegand or MSR.
- Reads up to 64 bits from Dallas iButton™ user memory or 56 bits from factory ID.
- Up to 144 characters or digits from/to Track 1, 2 or 3 Clock/Data (MSR) format input/output.
- Auto HEX and DEC convert to MSR Output.



SPECIFICATIONS

OPERATING

MSR Reference Standards	ISO7810, ISO 7811, JIS X6301, JIS X6302I
MSR Decode/Output Method	ISO/JIS-1 : Track 1 IATA , Track 2 ABA , Track 3 THRIFT JIS-II : Track NTT
Interface Format	Input/Output Interface - RS232C interface : Programmable by DIP Switch or Software (Option). Input / Output Default : 19200 bps, (8,N,1) Wiegand interface : Programmable by DIP Switch or Software (Option). Input Default : 26 Bits Output Default : 26 Bit, Pulse Width:100µs, Pulse Separation: 2ms MSR interface : Programmable by DIP Switch or Software (Option). Input Default : Decode ABA , 7-BIT,JIS II format card. Output Default : Track2 ABA , Simulate Swipe Card Speed : 40 IPS Input Interface only - iButton : Programmable by DIP Switch or Software (Option). For DS1990A (Unique 48-bits serial number)

ELECTRICAL

Power Input	8 to 24 VDC , Standby Current 10 mA@12VDC, Limit Current 200mA
Regulation Output	5 VDC +/- 10 % , 300 mA (max.)

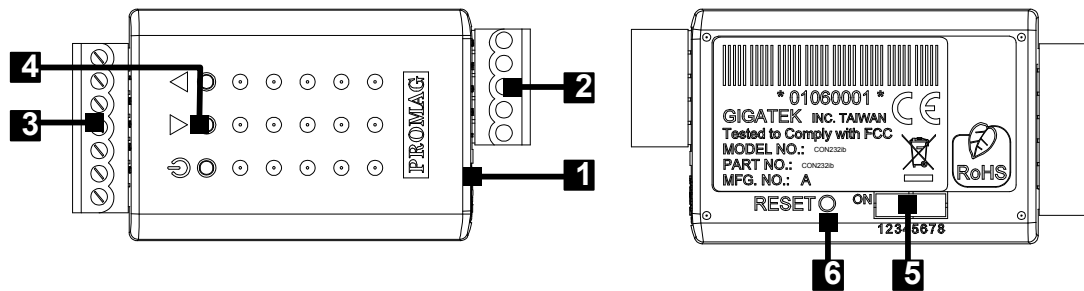
MECHANICAL

Dimensions	Length : 70 mm / Width : 35 mm / Height : 18 mm (Include Terminal)
Weight	30 gm (Include Terminal)
Connectors	5 pin terminal 3.5 mm : for iButton Input, RS232 and Power In/output 7 pin terminal 3.5 mm : for Power Output, Weigand, MSR In/output 2 pin D3.5mm : for Power In/output
Dip/Tact Switch	8 DIP : for Output Interface, RS232/Weigand/MSR output Setting Tact Switch : for ISP

ENVIRONMENTAL

Temperature	Operating : -10 °C to 60 °C Storage : -30 °C to 70 °C
Humidity	Operating : 10 % to 90 % noncondensing Storage : Up to 90% noncondensing

TERMINAL/SETTING/INDICATOR DESCRIPTIONS



1 Power Input



3 7PIN Terminal

Pin	Description
1	+5VDC Out
2	GND
3	Data
4	Strobe
5	Card Present
6	Data0
7	Data1

2 5PIN Terminal

Pin	Description
1	+12VDC Out
2	TX (Out)
3	RX (In)
4	iBUTTON
5	GND

4 LED Indicator

LED	Description
	Power (O)
	Input to Converter(G)
	Output from Converter(R)

PS. All LED indicator is On in the ISP mode.

6 RESET

SW	Description
Press before power on	ISP
Unpress before power on	Run
Press after power on	
Unpress after power on	

5 DIP Switch

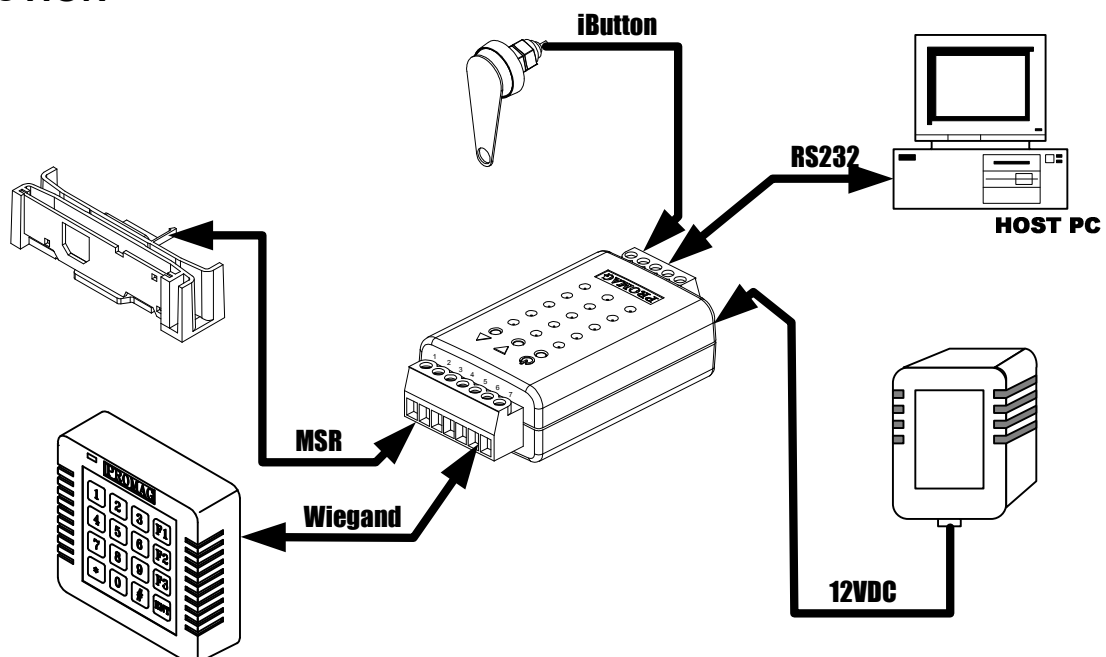
DIP8	DIP7	Output Interface
OFF	OFF	RS232 (Default)
OFF	ON	Wiegand
ON	OFF	Magnetic
ON	ON	Software Setting

DIP6	DIP5	RS232 Setting
OFF	OFF	19200 (Default)
OFF	ON	9600
ON	OFF	4800
ON	ON	Software Setting

DIP4	DIP3	MSR Output Setting
OFF	OFF	ABA (Default)
OFF	ON	7BIT
ON	OFF	JIS2
ON	ON	Software Setting

DIP2	DIP1	Wiegand Output Setting
OFF	OFF	26 bits (Default)
OFF	ON	34 bits
ON	OFF	42 bits
ON	ON	Software Setting

CONNECTION



APPLICATION NOTE

For hardware setting mode

1. Convert RS232 to Wiegand

RS232 Input Format (Only use baudrate 9600 , N , 8 , 1)

STX	Input Data (HEX characters)	CR	LF	ETX
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Wiegand Output Format

Parity	Data 13/16/21 bits	Data 13/16/21 bits	Parity
Summed for even parity		Summed for odd parity	

EX 1 : RS232 (9600 bps , 8 , N , 1) to Wiegand (26 Bits)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	ON	OFF	ON	OFF

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

Wiegand 26Bits Output Data

1	0	1	0	1	0	1	1	0	0	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0				
5					6					7					8					9					0				

EX 2 : RS232 (9600 bps , 8 , N , 1) to Wiegand (34 Bits)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
ON	OFF	OFF	OFF	ON	OFF	ON	OFF

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

WIEGAND 34Bits Output Data

1	0	0	1	1	0	1	0	0	0	1	0	1	0	1	1	0	0	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	1
3			4			5			6			7			8			9			0												

EX 3 : RS232 (9600 bps , 8 , N , 1) to Wiegand (42 Bits)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	ON	OFF	OFF	ON	OFF	ON	OFF

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

Wiegand 42Bits Output Data

1	0	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	1
1			2			3			4			5								
0	1	1	0	0	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	1
6			7			8			9			0								

2. Convert RS232 to Magnetic

RS232 Input Format (Only use baudrate 9600 bps , 8 , N , 1)

STX	Input Data (DEC characters)	CR	LF	ETX
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Magnetic Output Format

SS	Output Data (DEC characters)	ES
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EX 1: RS232 (9600 bps , 8 , N , 1) to Magnetic (ABA TK2)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	ON	OFF	OFF	ON

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

Magnetic Output Data

3Bh	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	3Fh
;	1	2	3	4	5	6	7	8	9	0	?

EX 2: RS232 (9600 bps , 8 , N , 1) to Magnetic (7BIT)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	ON	OFF	ON	OFF	OFF	ON

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

Magnetic Output Data

3Bh	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	3Fh
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EX 3: RS232 (9600 bps , 8 , N , 1) to Magnetic (JIS2)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	ON	ON	OFF	OFF	ON

RS232 Input Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

Magnetic Output Data

3Bh	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	3Fh
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3. Convert Wiegand 26bits to RS232

Wiegand Input Format (Only use Wiegand 26bits format)

Parity	Data 13 bits	Data 13 bits	Parity
Summed for even parity		Summed for odd parity	

RS232 Output Format

STX	Output Data (HEX characters)	CR	LF	ETX
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EX 1 : Wiegand (26 Bits) to RS232 (19200 bps , 8 , N , 1)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

EX 2 : Wiegand (26 Bits) to RS232 (9600 bps , 8 , N , 1)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

EX 3 : Wiegand (26 Bits) to RS232 (4800 bps , 8 , N , 1)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF

Wiegand 26Bits Input Data

1	0	1	0	1	0	1	1	0	0	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0
5				6				7				8				9				0					

RS232 Output Data

02h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	5	6	7	8	9	0	CR	LF	ETX

4. Convert Magnetic(ABA TK2) to RS232

Magnetic Input Format (Only use this format)

10 Leading Zeros	SS	Input Data (DEC characters)	ES	10 Leading Zeros
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RS232 Output Format

STX	Output Data (DEC characters)	CR	LF	ETX
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EX 1: Magnetic (ABA TK2) to RS232 (19200 bps , 8 , N , 1)

DIP Switch Setting

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

EX 2: Magnetic (ABA TK2) to RS232 (9600 bps , 8 , N , 1)**DIP Switch Setting**

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

EX 3: Magnetic (ABA TK2) to RS232 (4800 bps , 8 , N , 1)**DIP Switch Setting**

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF

Magnetic Input Data

3Bh	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	3Fh
;	1	2	3	4	5	6	7	8	9	0	?

RS232 Output Data

02h	31h	32h	33h	34h	35h	36h	37h	38h	39h	30h	0Dh	0Ah	03h
STX	1	2	3	4	5	6	7	8	9	0	CR	LF	ETX

5. iButton to RS232 output format**RS232 Output Format**

STX	ID number (HEX characters)	CR	LF	ETX
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RS232 Output Data

02h	30h	30h	30h	30h	31h	32h	42h	42h	38h	42h	41h	43h	0Dh	0Ah	03h
STX	0	0	0	0	1	2	B	B	8	B	A	C	CR	LF	ETX

For software setting mode**RS232 Convert to MSR and Wiegand****RS232 Frame Format**

STX	'W'	n	Output Data	CR
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Description

Output Interface	n	Format	Output Data Available Character	Taboo Character
MSR	'1'	7BIT	ASCII 20h ~ 5Fh , Max 144 Characters	25h(%) , 3Fh (?)
	'2'	JIS2	ASCII 00h ~ 7Fh , Max 144 Characters	02h(STX) , 0Dh(CR) 7Fh(DEL)
	'3'	ABA	ASCII 30h ~ 3Fh , Max 144 Characters	3Bh(;) , 3Fh (?)
Wiegand	'0'	Setting	ASCII 30h ~ 39h, 41h ~ 46h	

1. "Setting" means the to setting of the Con100iB.
2. Any setting of the CON100iB does not effect if n= '1' , '2' , '3' in MSR output.
3. It only can send '0' ~ '9' , 'A' ~ 'F' character if n=0 in MSR output.
4. The baud rate is fixed at 19200 bps,8N1 .

Note : If there is other customized demand of dip switch , please contact your distributor or GIGA-TMS INC.