DIGITAL I/O ADAPTER
GSM-20H10 OPT
SM-01/02

Quick Start Guide

GW INSTEK PART NO. 82SM-02000M01

ISO-9001 CERTIFIED
MANUFACTURER

GW INSTEK

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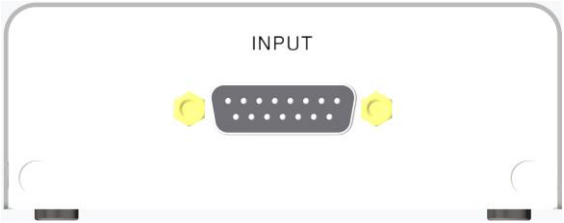
SM-01 DIGITAL I/O ADAPTER

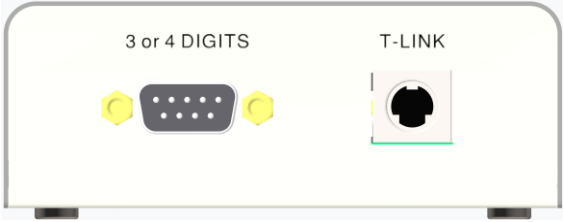
Overview

The SM-01 DIGITAL I/O ADAPTER is a signal separator for the GSM-20H10. It divides the Digital I/O signal of a DB-15 digital I/O port to a TRIG link port (MINI DIN SOCKET) and a male DB-9 digital I/O port. The TRIG link port is used for input and output triggers signal. The DB-9 digital I/O port is used for output 3-bit or 4-bit pattern value of Limit testing.

Input port



Output port

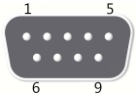


Connections

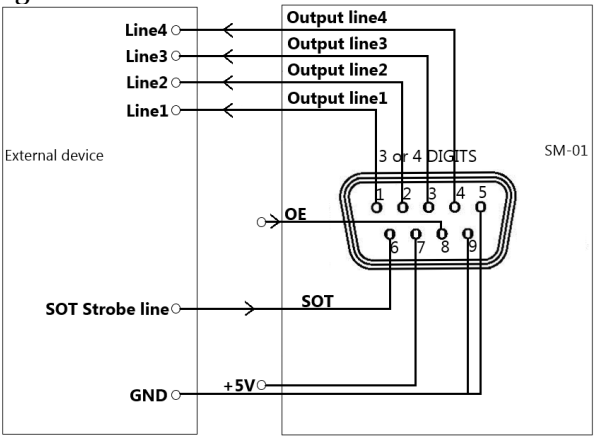
Limit testing

Description	The GSM output 3-bit pattern value or 4-bit pattern value via SM-01 DIGITAL I/O ADAPTER. The Digital I/O port includes 4 output lines.
Definition	Output1=Pin1 Output2=Pin2 Output3=Pin3 Output4=Pin4 +5V=Pin7 Ground=Pin5 and Pin9 SOT=Pin6 OE=Pin8

Pin number



Connection diagram



Pattern value formats

The SM-01 DIGITAL I/O ADAPTER can output binary bit patterns from 0 to 111 or 0 to 1111.From the front panel,an output bit pattern must be entered as a decimal value .

For remote operation, an output bit pattern can be set in the decimal, binary, octal, or hexadecimal format. When sending a command to set an output bit

pattern, there are two paremeter types. For the decimal format, an <NRf> parameter type is required. For any of the non-decimal formats, an <NDN> parameter type is used. Parameter value ranges for 4-bit operation are as follows:

<NRf>=0 to 15		Decimal format
<NDN>	=#B0 to #B1111	Binary format
	=#Q0 to #Q17	Octal format
	=#H0 to #HF	Hexadecimal format

Parameter value ranges for 3-bit operation are as follows:

<NRf>=0 to 7		Decimal format
<NDN>	=#B0 to #B111	Binary format
	=#Q0 to #Q7	Octal format
	=#H0 to #H7	Hexadecimal format

The following command is used to set SOUR2 and TTL response formats.

:FORMat:SOURce2 <name>

<name>=	ASCii	ASCII format
	HEXadecimal	Hexadecimal format
	OCTal	Octal format
	BINary	Binary format

Digital output

From the front panel, you can set the output level of the Digital I/O port by System->Control->Digout. For example, if you set Digout to 7, all 3 I/O ports will be set high, if you set Digout to 15, all 4

I/O ports will be set high.

Input/output level

When operating in 3bit/4bit mode, the maximum sink current for an output line is 500mA. To prevent damage to the GSM, do not exceed the maximum sink current of the I/O port.

Source current limits

- When the output lines set TTL high levels, the source current for each output lines is limited to approximately 2mA.
- +5V line: the source current is limited to approximately 300mA

OE line

The digital I/O port provides an output enable control line to be used together with the output enable switch of a test fixture. When used correctly, the Output of the GSM will turn off if the lid of the test fixture is opened.

Trig testing

Decription This connector is used to input or output trigger signal while running Trig test regardless the digits number(3bit, 4bit) of Digout size option.

Please refer to GSM-20H10 User manual to operate TRIG function and this trig connector.

Pin number

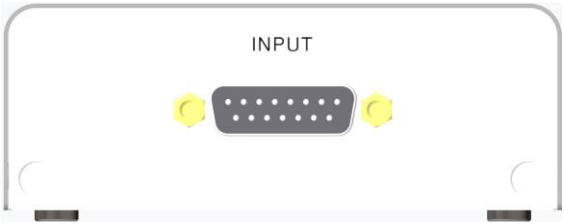
Pin1: Trig link 1
Pin2: Trig link 2
Pin3: Trig link 3
Pin4: Trig link 4
Pin5: NC
Pin6: NC
Pin7: GND
Pin8: GND

SM-02 DIGITAL I/O ADAPTER

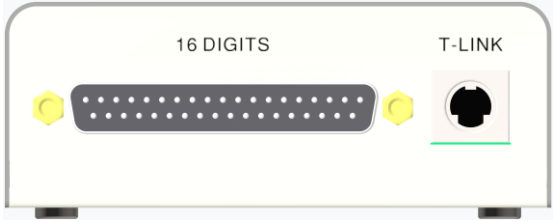
Overview

The SM-02 DIGITAL I/O ADAPTER is a signal expansion option for GSM-20H10. The adapter divides the Digital I/O signal of a DB-15 digital I/O port to a TRIG link port (MINI DIN SOCKET) and a male DB-37 digital I/O port. The TRIG link port is used for input and output triggers. The 37-pin D-SUB digital I/O port is used for output 16-bit pattern value of Limit testing.

Input port



Output port



Connections

Limit testing

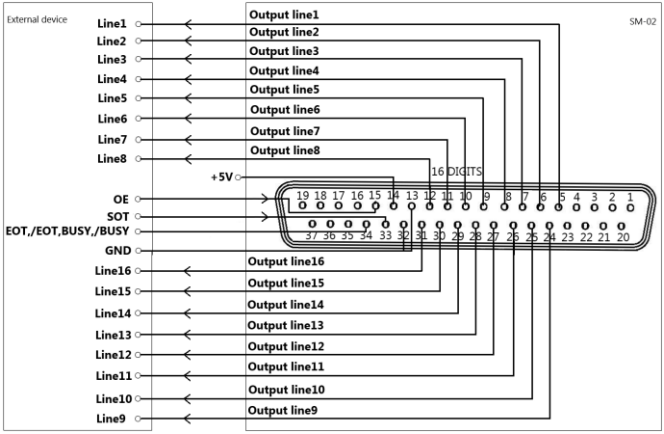
Description The GSM can output 16-bit pattern value via SM-02 DIGITAL I/O ADAPTER. The Digital I/O port includes 16 output lines.

Pin Definition
Output1=Pin5
Output2=Pin6
Output3=Pin7
Output4=Pin8
Output5=Pin9
Output6=Pin10
Output7=Pin11

Output8=Pin12
Output9=Pin24
Output10=Pin25
Output11=Pin26
Output12=Pin27
Output13=Pin28
Output14=Pin29
Output15=Pin30
Output16=Pin31
+5V=Pin14
Ground=Pin13 and Pin32
SOT=Pin33
OE=Pin15
EOT, /EOT, BUSY, /BUSY=Pin34

Pin number

Connection diagram



Pattern value formats

The 16bit SM-02 DIGITAL I/O ADAPTER can output binary bit patterns from 0 to 1111111111111111. Before this, a decimal pattern value (0-65535) should be set from the front panel. For example, if you want output lines 8 and 2 to be high (0000000010000010), you should set the pattern value as 130.

For remote operation, an output bit pattern can be set in the decimal, binary, octal, or hexadecimal format. When sending a command to set an output bit pattern, there are two paremeter types. For the decimal

format, an <NRf> parameter type is required. For any of the non-decimal formats, an <NDN> parameter type is used. Parameter value ranges for 16-bit operation are as follows:

<NRf>=0 to 65535	Decimal format
<NDN> =#B0 to #B1111111111111111	Binary format
=#Q0 to #Q177777	Octal format
=#H0 to #HFFFF	Hexadecimal format

The following command is used to set SOUR2 and TTL response formats.

:FORMat:SOURce2 <name>

<name>=ASCii	ASCII format
HEXadecimal	Hexadecimal format
OCTal	Octal format
BINary	Binary format

Digital output From the front panel, you can set the output level of the Digital I/O port by System->Control->Digout. For example, if you set Digout to 65535, all 16 I/O ports will be set high.

Input/ output level The maximum sink current for an output line is 500mA. To prevent damage to the GSM, do not exceed the maximum sink current of the

I/O port.

EOT, /EOT, BUSY, /BUSY line: Maximum allowable sink current is 500mA.

Maximum input voltage

The absolute maximum allowable input voltage on any line of the digital I/O is 30V.

Source current limits

- 16 output lines: when the output lines set TTL high levels, the source current for each output lines is limited to approximately 5mA.
- +5V line: the source current is limited to approximately 300mA.

Output voltage

16 output lines and EOT, /EOT, BUSY, /BUSY line: the maximum working output voltage for these lines is 30V.

OE line The digital I/O port provides an output

enable control line to be used together with the output enable switch of a test fixture. When used correctly, the Output of the GSM turn off if the lid of the test fixture is opened.

Trig testing

Decription This connector is used to input or output trigger signal while running Trig test.

Please refer to GSM-20H10 User manual to operate TRIG function and this trig connector.

Pin number

Pin1: Trig link 1
Pin2: Trig link 2
Pin3: Trig link 3
Pin4: Trig link 4
Pin5: NC
Pin6: NC
Pin7: GND
Pin8: GND