

SJT-SPG-V2 MRL EBR

Direction & Speed Display Device

Manual

Version:V1.1

Contents

1. Product Introduction	2
1.1 Introduction	2
1.2 Feature	2
1.3 Range of application	2
1.4 Notice for use	2
2. Product Information	3
2.1 Model	3
2.2 Dimension	3
2.3 Composition	4
2.4 Functions	4
3. Wiring and Port	5
3.1 System Wiring	5
3.2 Port Description	6
4. Commissioning	7
4.1 Interface	7
4.2 Setting	8

1. Product Introduction

1.1 Introduction

SJT-SPG-V2 Direction & Speed display device for MRL Electric Brake Release (short as SJT-SPG-V2) is used for monitoring elevator speed. This product is mainly used for MRL elevator. It import signal through encoder feedback wire, and use inner analytical unit to calculate elevator speed and direction during elevator sliding in real-time. By 4 bit segment display, it displays elevator speed and direction during electric brake open. It is intuitive for monitor and easy for installation.

1.2 Feature

- ◆ Display elevator speed and direction through 4 segments in real-time;
- ◆ Automatically detect power supply from controller SPG card output. Once the power from SPG card recovers, this monitor device will switch off detection channel;
- ◆ Parameter can be set through button;
- ◆ Easy for installation, maintenance and debugging;
- ◆ Pass EMC test, with strong anti-electromagnetic interference capacity.

1.3 Range of application

- ◆ This monitor device need to work with SIN/COS SPG card and controller. It cannot work with other PG card.

1.4 Notice for use

- ◆ Environment:
Temperature: $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$;
Humidity: $\leq 95\% \text{RH}$, non-condensing;
- ◆ To ensure the performance and lifetime of product, it should be kept away from electric conduction, corrosive/explosive gases, metal powder, oil fog, dust and etc.
- ◆ Violent hit and Scratch should be avoided during transportation, installation and use.
- ◆ Installation, debugging and maintenance should be performed by professional.

2. Product Information

2.1 Model

The model description of SJT-SPG-V2 is as following:

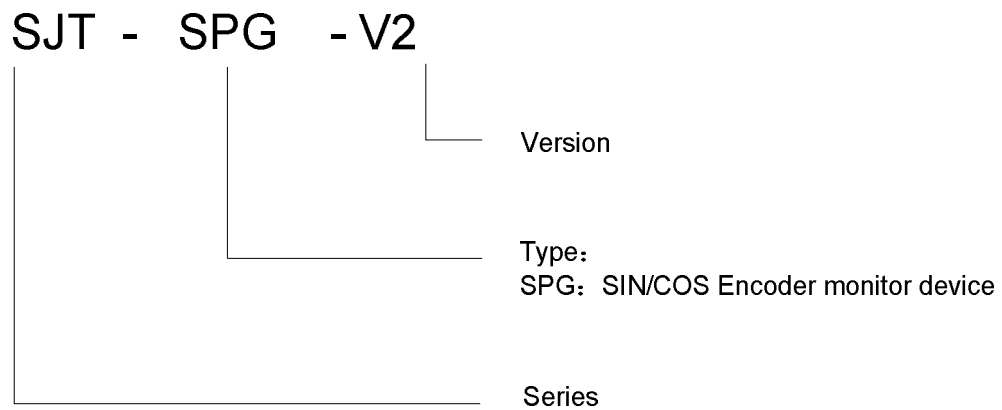
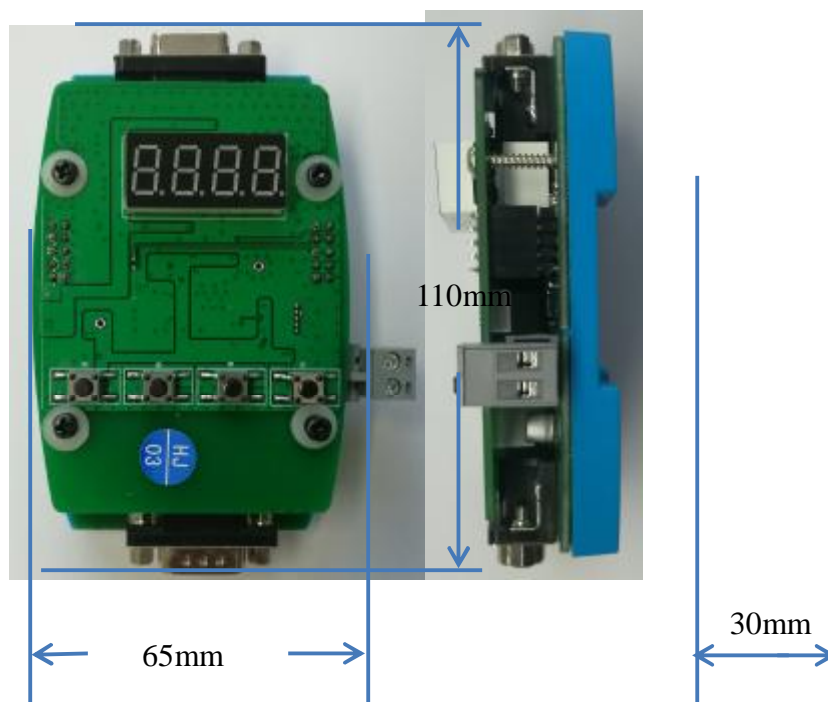


Figure 2.1 Model Description

2.2 Dimension

The dimension is as following:



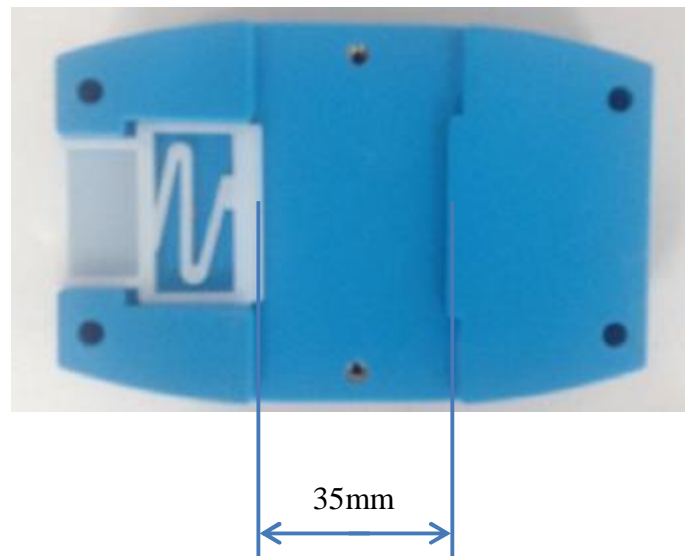


Figure 2.2 Dimension

Note: There's slot at back side, so it can be fastened on standard rail.

2.3 Composition

The main composition of product is shown in following chart:

Chart 2.1 Main composition of SJT-SPG-V2

Name	Model	Quantity	Description
Connection & Collection Board	SJT-SPG-AB	1	For encoder signal connection and collection.
LED Button Board	SJT-SPG-LED	1	For debugging and setting encoder data collector.

2.4 Functions

Chart 2.2 Function list

No.	Function	Description
1	Automatic detection of SPG card power	Device monitor SPG card power input. Once SPG card power ON, device will cut off its connection with encoder.
2	Real-time speed collection and display	When detection system work, device sensor encoder feedback signal and calculate elevator speed according to speed and RPM setting, then quickly refresh 4 segments.
3	Parameter setting	Use 4 buttons on SJT-SPG-LED with 4 segments to set parameters.
4	Parameter save	Parameter related to speed will be saved directly after modification. It will not lost after reset.

3. Wiring and Port

3.1 System Wiring

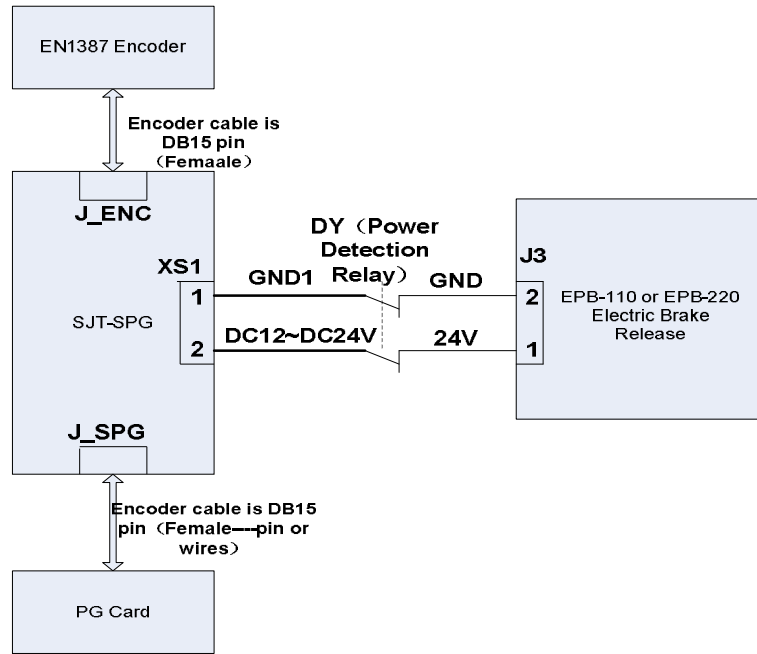


Figure 3.1 Wiring Type 1

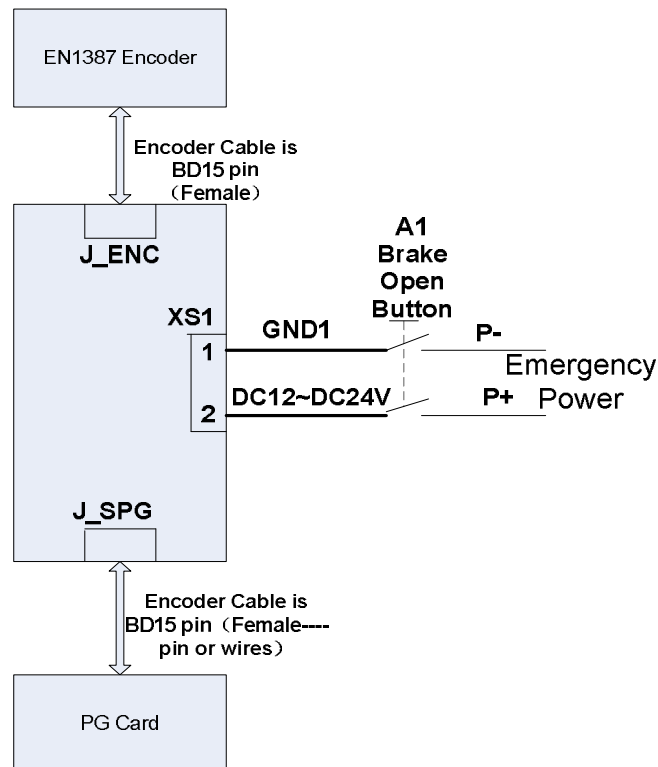


Figure 3.2 Wiring Type 2

3.2 Port Description

Chart 3.1 J_SPG (Pin Seat) Output

Label	Pin	Location	Definition	Usage	Specification			
					Type	Capacity	OFF/ON Time	Highest Speed
J_SPG	B-	J_SPG-1	B-	Differential signal B-	Differential Input			40KHz
	*	J_SPG-2	—	—	—			
	R+	J_SPG-3	R+	Differential signal R+	Differential Input			40KHz
	R-	J_SPG-4	R-	Differential signal R-	Differential Input			40KHz
	A+	J_SPG-5	A+	Differential signal A+	Differential Input			40KHz
	A-	J_SPG-6	A-	Differential signal A-	Differential Input			40KHz
	0V	J_SPG-7	GND	5V GND	Ground			
	B+	J_SPG-8	B+	Differential signal B+	Differential Input			40KHz
	5V	J_SPG-9	+5V	5V Power	Power Output	+500mA/5V±2.5% ±50mV		
	C-	J_SPG-10	C-	Differential signal C-	Differential Input			40KHz
	C+	J_SPG-11	C+	Differential signal C+	Differential Input			40KHz
	D+	J_SPG-12	D+	Differential signal D+	Differential Input			40KHz
	D-	J_SPG-13	D-	Differential signal D-	Differential Input			40KHz
	*	J_SPG-14	—	—	—			
	*	J_SPG-15	—	—	—			

Chart 3.2 J_ENC (Hole Seat) Input

Label	Pin	Location	Definition	Usage	Specification			
					Type	Capacity	OFF/ON Time	Highest Speed
J_ENC	B-	J_ENC-1	B-	Differential signal B-	Differential Input			40KHz
	*	J_ENC-2	—	—	—			
	R+	J_ENC-3	R+	Differential signal R+	Differential Input			40KHz
	R-	J_ENC-4	R-	Differential signal R-	Differential Input			40KHz
	A+	J_ENC-5	A+	Differential signal A+	Differential Input			40KHz
	A-	J_ENC-6	A-	Differential signal A-	Differential Input			40KHz
	0V	J_ENC-7	GND	5V GND	Ground			
	B+	J_ENC-8	B+	Differential signal B+	Differential Input			40KHz
	5V	J_ENC-9	+5V	5V Power	Power Output	+500mA/5V±2.5% ±50mV		
	C-	J_ENC-10	C-	Differential signal C-	Differential Input			40KHz
	C+	J_ENC-11	C+	Differential signal C+	Differential Input			40KHz
	D+	J_ENC-12	D+	Differential signal D+	Differential Input			40KHz
	D-	J_ENC-13	D-	Differential signal D-	Differential Input			40KHz
	*	J_ENC-14	—	—	—			
	*	J_ENC-15	—	—	—			

Chart 3.3 External power port

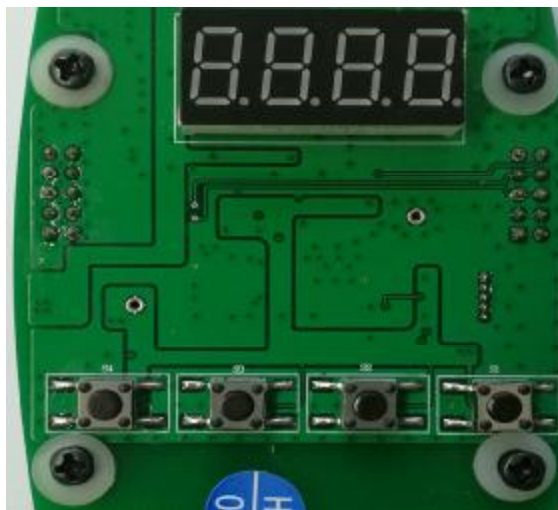
Terminal Name	Position	Definition	Description
XS1	1	GND[V-]	Ground
	2	24V[V+]	DC12~DC24V Power Input

4. Commissioning

Commissioning and parameter setting are performed through SJT-SPG-V2 LED segments and buttons.

4.1 Interface

LED & Buttons interface for speed detection:

**Figure 4.1 LED & Button Interface**

Customer interface of data collector is composed of 4 segment LEDs and 4 buttons.

Chart 4.1 Operation buttons

Label	Position	Function
S1	1 st Button from right	Enter
S2	2 nd Button from right	Up
S3	3 rd Button from right	Shift
S4	4 th Bottom from right	Exit

After power On, segment display is as following (Default speed unit is m/s):

	0.	0	0
--	----	---	---

When encoder has speed feedback, it will calculate speed according to preset parameters and refresh display in real-time.

Note: The first bit is symbol bit. If forward, nothing displayed. If backward, display “-”.

For example, elevator speed is 0.68m/s, then segment display will be as following:

	0.	6	8
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For example, elevator speed is -0.27m/s, then segment display will be as following:

-	0.	2	7
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4.2 Setting

Default setting:

F00: Rated Speed Default: 1.00 m/s

F01: Rated RPM Default: 96 RPM

F02: Encoder Pulse Default: 2048. If encoder is ERN1387, please don't modify default setting. Otherwise it may show incorrect speed.

F03: Encoder Wire Sequence Default: 0. When elevator running direction is different with display direction, use this parameter to correct display direction. Normally, this value should be same with F6-03 parameter in controller.

Above parameter setting can be performed by segment display and buttons on SJT-SPG-LED.

Press Enter at menu to parameter setting interface. Detail operation process is shown as following:

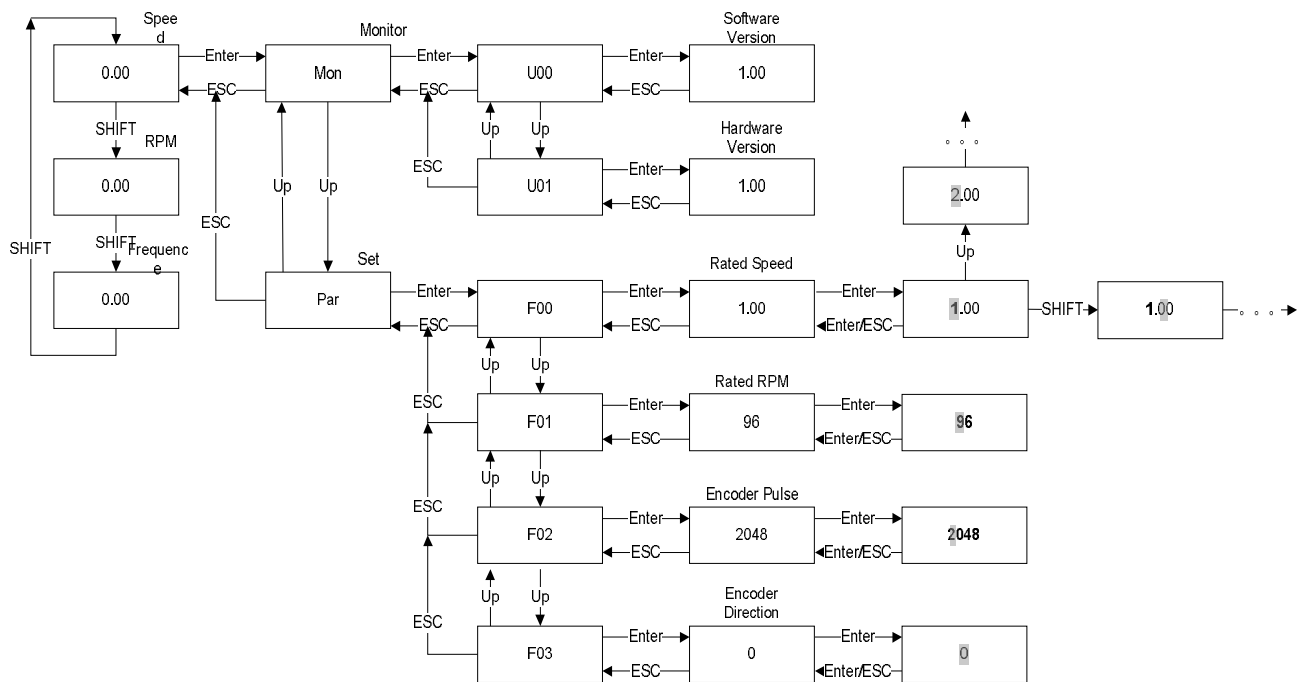


Figure 4.2 Parameter setting flow chart

Note: Customer needs to modify parameters according to actual elevator and motor parameters, so that the displayed value can be actual speed.