CGEO INTERNATIONAL LIMITED

Model CGEO-JB-20

Junction Box

Installation Manual

（REV A）

CONTENT

1. Brief Introduction

CGEO-JB-20 Model manual Junction Box is multi-channel signal switching device and is used in signal cable convergence location, especially in wireless monitoring a bunch of transducers and is good to enhance reading efficiency.

To prevent transducers from lighting damaging, each channel of junction box is provided anti-lighting function, but standard configuring one doesn't have such function, and the details please contact Beijing Soil.

2. Structure

CGEO-JB-20 Model Junction Box is composed of a dampproof enclosure, signal cable entrance, cable connection end board, channel switching knob and signal output cables and its internal structure as Figure 1

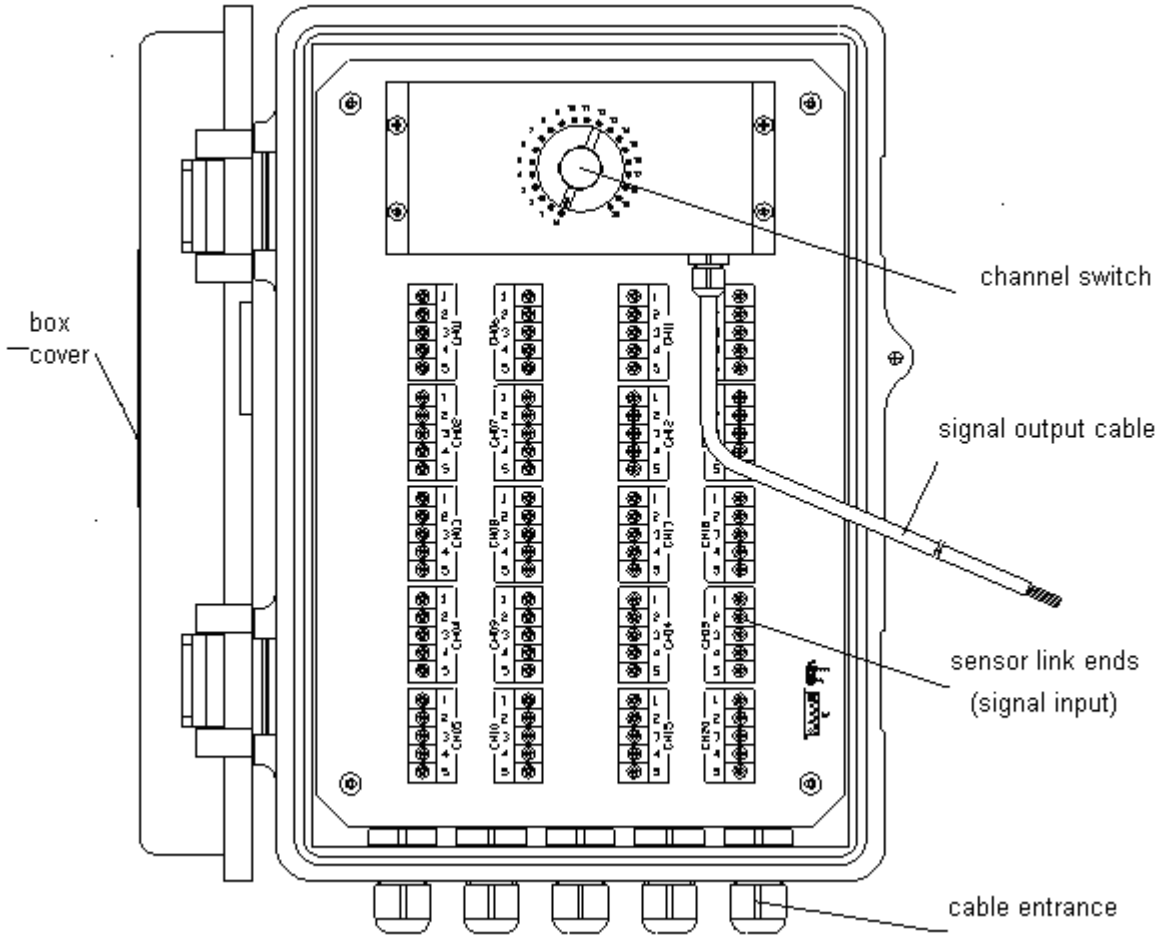

Figure 1 Junction Box Internal Structure

A Junction box has 20 access channels; each channel has 5 connection ends so verity of transducers

with less than 5 cores can be connected into but please notes to use right model readout.

A Junction box cable entrance equips with moisture-proof structure ferrule, suit for cable outer diameter 5~10 mm, witch can stop moisture from entering and cable from pulling out. The core conductor section area of cable terminals accessed can be 2mm^2 at most.

A signal output cable is an output bus of all channel transducer signal, which adopts a 4 core shield cable. The corresponding relationship of its core colors and each channel connection end as follows:

Table 1-the corresponding relation between output cable core colors and input channel connection end series number

Input channel end series number	Output signal cable corresponding core color
1	Black
2	Red
3	Green
4	White
5	Naked Line(shield or ground)

3. Connection Method

On PCB board mark all 20 channels of junction box and 5 terminals of each channel all mark in order 1-5. Before cable connecting, cable cores peel out conductor length 8 mm and recommend tinning conductor and keep a good contact. See figure 2.

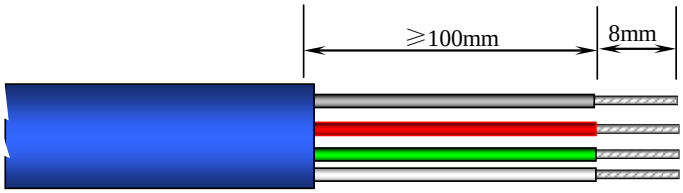

Figure 2-Cable Core Peeling Length

Cable core colors and terminal series numbers are not much bound but must keep consistent the access order of each channel cable core. While connecting instruments into junction box, confirm each channel corresponding instrument series number and keep a note.

As to different electrical type transducers, don't recommend a mix access in a junction box, or cause damages to transducers or readout unless confirming reading not problem or very professional.

4. Reading Method

Choose right type of readout basing on transducers, connect transducer signal input ends with signal output ends on junction box and confirm connection correct.

Turn on readout power, switch junction box switches on right position. Normally start from 1, read and then switch to next one. Position “0” is empty and is connected with none.

Completing all channel readings, please switch channel switches to “0” position and be ready for next use.

5. Maintenance

1）Daily operation especially channel switch knob should slowly be turned, rude operation may damage switches.

2）Output cable heads should be cleaned or tinned timely and keep a good contact performance because oxidation and dirty will cause reading errors

3）Although junction boxes are anti-moisture enclosure, in moisture environment dew will generate in connection board and channel switch and causes measuring error, so keeping enclosure inner dry is a necessary for daily maintenance. If there is any unoccupied cable entrance, it should be closed with choke plugs and stop moisture from entering. If there is dew inside an enclosure, please dry it with electrical hair dryer.

4）This junction box is not suitable for the transducers with over 200 mA signal current or work current.

Appendix 1- VW Transducer Connection Table

Channel	End series Number	Function	Channel	End Series Number	Function	Channel	End Series Number	Function	Channel	End series Number	Function
CH 1	1	VW+	CH 6	1	VW+	CH11	1	VW+	CH 16	1	VW+
	2	VW-		2	VW-		2	VW-		2	VW-
	3	T+		3	T+		3	T+		3	T+
	4	T-		4	T-		4	T-		4	T-
	5	S		5	S		5	S		5	S
CH 2	1	VW+	CH 7	1	VW+	CH12	1	VW+	CH 17	1	VW+
	2	VW-		2	VW-		2	VW-		2	VW-
	3	T+		3	T+		3	T+		3	T+
	4	T-		4	T-		4	T-		4	T-
	5	S		5	S		5	S		5	S
CH 3	1	VW+	CH 8	1	VW+	CH13	1	VW+	CH 18	1	VW+
	2	VW-		2	VW-		2	VW-		2	VW-
	3	T+		3	T+		3	T+		3	T+
	4	T-		4	T-		4	T-		4	T-
	5	S		5	S		5	S		5	S
CH 4	1	VW+	CH 9	1	VW+	CH14	1	VW+	CH 19	1	VW+
	2	VW-		2	VW-		2	VW-		2	VW-
	3	T+		3	T+		3	T+		3	T+
	4	T-		4	T-		4	T-		4	T-
	5	S		5	S		5	S		5	S
CH 1	1	VW+	CH 10	1	VW+	CH15	1	VW+	CH 20	1	VW+
	2	VW-		2	VW-		2	VW-		2	VW-
	3	T+		3	T+		3	T+		3	T+
	4	T-		4	T-		4	T-		4	T-
	5	S		5	S		5	S		5	S
Output Cable Cores		Black		Red		Green		White		Naked Line	
Corresponding Function		VW＋		VW＋		T+		T-		Shield	
Description		VW		VW		Temperature		Temperature		Shield ground	

Note: S in table represents shield

Appendix 2- Differential Resistance type Transducer Connection Table

Channel	End Series Number	Function	Channel	End Series Number	Function	Channel	End Series Number	Function	Channel	End Series Number	Function
CH1	1	Black	CH6	1	Black	CH11	1	Black	CH 16	1	Black
	2	Red		2	Red		2	Red		2	Red
	3	Green		3	Green		3	Green		3	Green
	4	White		4	White		4	White		4	White
	5	Blue		5	Blue		5	Blue		5	Blue
CH2	1	Black	CH7	1	Black	CH12	1	Black	CH 17	1	Black
	2	Red		2	Red		2	Red		2	Red
	3	Green		3	Greed		3	Green		3	Green
	4	White		4	White		4	White		4	White
	5	Blue		5	Blue		5	Blue		5	Blue
CH3	1	Black	CH8	1	Black	CH13	1	Black	CH 18	1	Black
	2	Red		2	Red		2	Red		2	Red
	3	Green		3	Green		3	Green		3	Green
	4	White		4	White		4	White		4	White
	5	Blue		5	Blue		5	Blue		5	Blue
CH4	1	Black	CH9	1	Black	CH14	1	Black	CH 19	1	Black
	2	Red		2	Red		2	Red		2	Red
	3	Green		3	Green		3	Green		3	Green
	4	White		4	White		4	White		4	White
	5	Blue		5	Blue		5	Blue		5	Blue
CH5	1	Black	CH10	1	Black	CH15	1	Black	CH 20	1	Black
	2	Red		2	Red		2	Red		2	Red
	3	Green		3	Green		3	Green		3	Green
	4	White		4	White		4	White		4	White
	5	Blue		5	Blue		5	Blue		5	Blue
Output cable cores		Black		Red		Green		White		Naked line	
Corresponding function		Black		Red		Green		White		Blue	