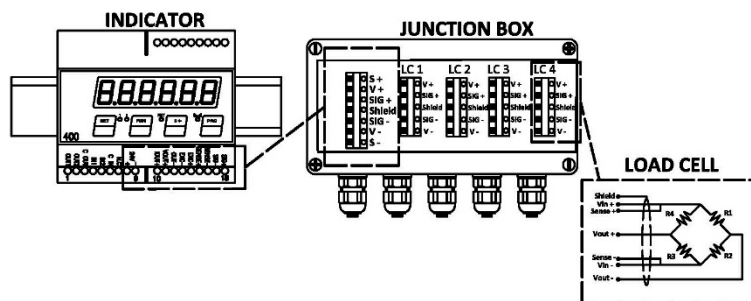


LOAD CELL + JUNCTION BOX + INDICATOR CONNECTION

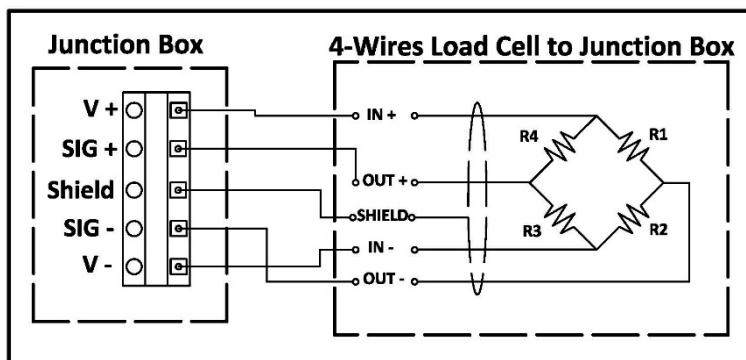
The intent of this technical note is help the user when making connections of a 4 or 6 wires UTILCELL load cell to a junction box and to an indicator types DAT, SMART, MATRIX or MATRIX II and SWIFT.

Below is shown the general connection scheme for a load cell to a junction box and to an indicator.



4-wires load cell connection to a junction box

That is the easiest connection, because it is direct, without bridges between terminals, as shown on bellow's figure.

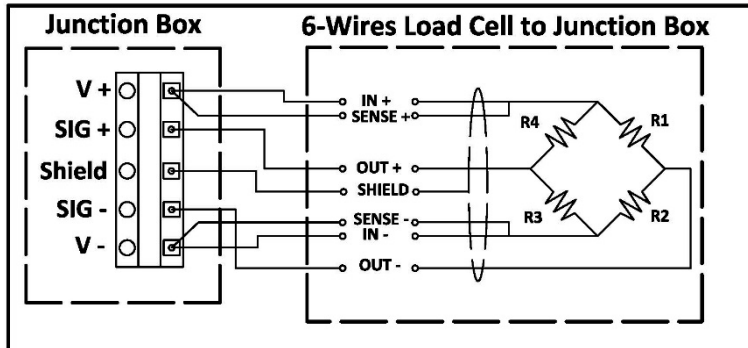


The following table displays the equivalence between load cell terminals-colors and junction box terminals.

Junction box input coding	4-wires load cell coding	4-wires UTILCELL load cell color coding
V +	IN +	Green
SIG +	OUT +	Red
SHIELD	SHIELD	-
SIG -	OUT -	White
V -	IN -	Black

6-wires load cell connection to a junction box

The 6-wires load cell wiring to a junction box should be performed as shown in the next figure, we must make a bridge between IN + and SENSE +, connect to V + and the same for IN- and SENSE-, connect to V -.

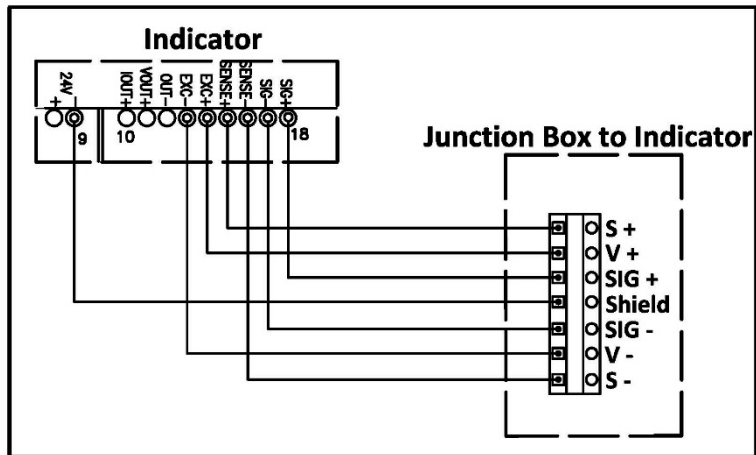


The following table shows the equivalence between load cell terminals-colors and junction box terminals.

Junction box input coding	6-wires load cell coding	6-wires UTILCELL load cell color coding
V +	IN +	Green
	SENSE +	Blue
SIG +	OUT +	Red
SHIELD	SHIELD	-
SIG -	OUT -	White
V -	IN -	Black
	SENSE -	Yellow

Junction box to DAT indicator connection

The Junction box connection to the indicator is performed as follows; we only should connect the pin out as shown in the next figure.

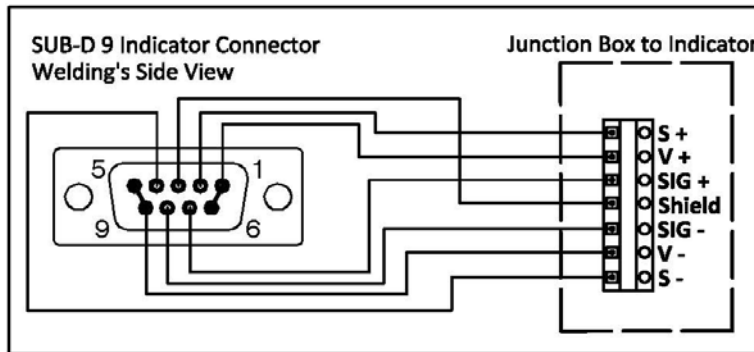


The following table shows the equivalence between DAT indicator, junction box, and load cell terminals.

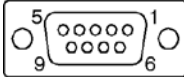
DAT 400 indicator coding		Junction box coding output	UTILCELL load cell coding	UTILCELL load cell color code
PIN	Signal			
13	EXC -	V -	- IN	Black
14	EXC +	V +	+ IN	Green
15	SENSE +	S +	+ SENSE	Blue
16	SENSE -	S -	- SENSE	Yellow
17	SIG -	SIG -	- OUT	White
18	SIG +	SIG +	+ OUT	Red
9	GND	SHIELD	SHIELD	-

Junction box connection to SMART, MATRIX or MATRIX II

To perform the connection to a junction box from one of these indicators it is necessary to make the wiring as follows, being necessary to perform bridges between terminals 1 and 6 to positive excitation V + from the junction box, and terminals 5 and 9 to negative excitation V - from the junction box.

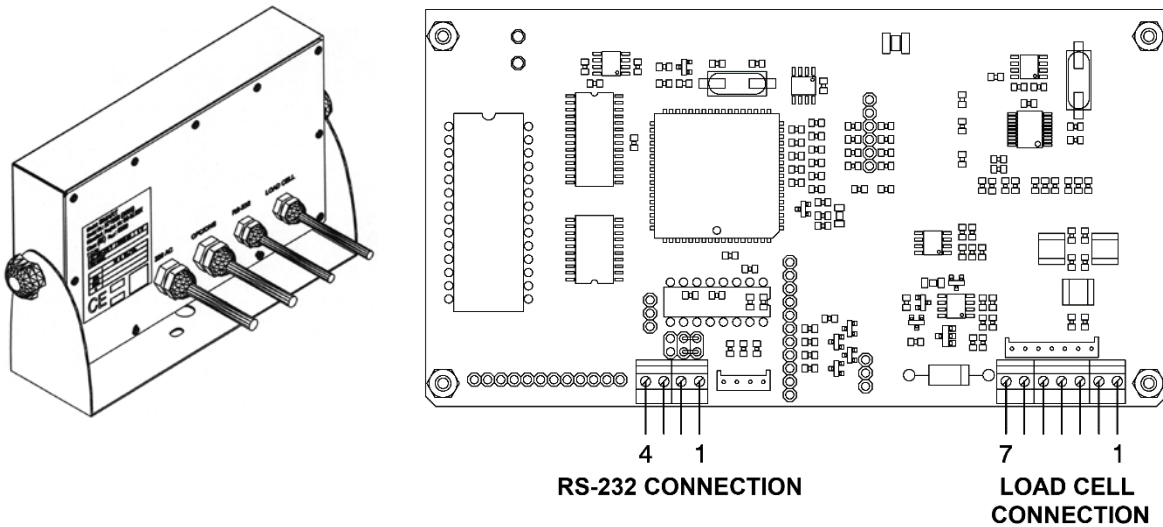


The following table shows the equivalence between junction's box terminals and SMART, MATRIX or MATRIX II indicator's terminals.

SUB-D 9 Male aerial	Indicator coding		Junction box output coding	UTILCELL load cell coding	UTILCELL load cell color coding
	PIN	Signal			
 <p>Pin Assignment View from welded side</p>	1	EXC +	V +	+ IN	Green
	6				
	2	SENSE +	S +	+ SENSE	Blue
	7	SIG +	SIG +	+ OUT	Red
	3	SHIELD	SHIELD	SHIELD	-
	8	SIG -	SIG -	- OUT	White
	4	SENSE -	S -	- SENSE	Yellow
	5	EXC -	V -	- IN	Black
	9				

Connection to a SMART IP-65

To perform the following wiring, it is necessary to use the cable-gland located on the rear side on the device, as shown in the following figures:



For a 6-wire load cell:

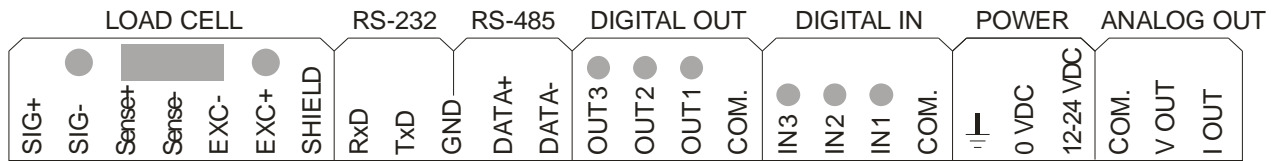
Load cell connection			RS-232 connection	
PIN	SIGNAL	UTILCELL load cell code	PIN	SIGNAL
1	SIG +	Red	1	TxD
2	SIG -	White	2	RxD
3	Shield	-	3	RTS
4	Sense +	Blue	4	GND
5	Sense -	Yellow		
6	EXC -	Black		
7	EXC +	Green		

If a 4-wire power cord is used, bridge 4-7 pins (EXC + and SENSE +) and 5-6 (EXC - and SENSE -) in the aerial connector.

Load Cell Connection			RS-232 Connection	
PIN	SIGNAL	UTILCELL load cell color coding	PIN	SIGNAL
1	SIG +	Red	1	TxD
2	SIG -	White	2	RxD
3	Shield	-	3	RTS
5-6	EXC -	Black	4	GND
4-7	EXC +	Green		

Junction box connection to SWIFT

Shown below are the signal matching and connections, marked on the front panel of the SWIFT:



For a 6-wire connection cable

LOAD CELL	SWIFT	Junction box output coding	UTILCELL load cell color coding
	SIG +	+ SIG	Red
	SIG -	- SIG	White
	SENSE +	+ S	Blue
	SENSE -	- S	Yellow
	EXC -	- V	Black
	EXC +	+ V	Green
	SHIELD	SHIELD	Shield

In the case of using 4-wire connection cable, a bridge between EXC+ to SENSE+ and EXC- to SENSE- should be made in SWIFT terminals:

LOAD CELL	SWIFT	Junction Box output Coding	UTILCELL load cell color coding
	SIG+	+SIG	Red
	SIG-	-SIG	White
	SENSE+	Green (bridge with EXC+)	-
	SENSE-	Black (bridge with EXC-)	-
	EXC-	-V	Black
	EXC+	+V	Green
	SHIELD	SHIELD	Shield

From Utilcell, we hope this technical note has been of your help. It is only a guideline and it is not a contractual specification. We reserve the right to change the content of this technical note at any time without notice. We remaining at your disposal for any further information.