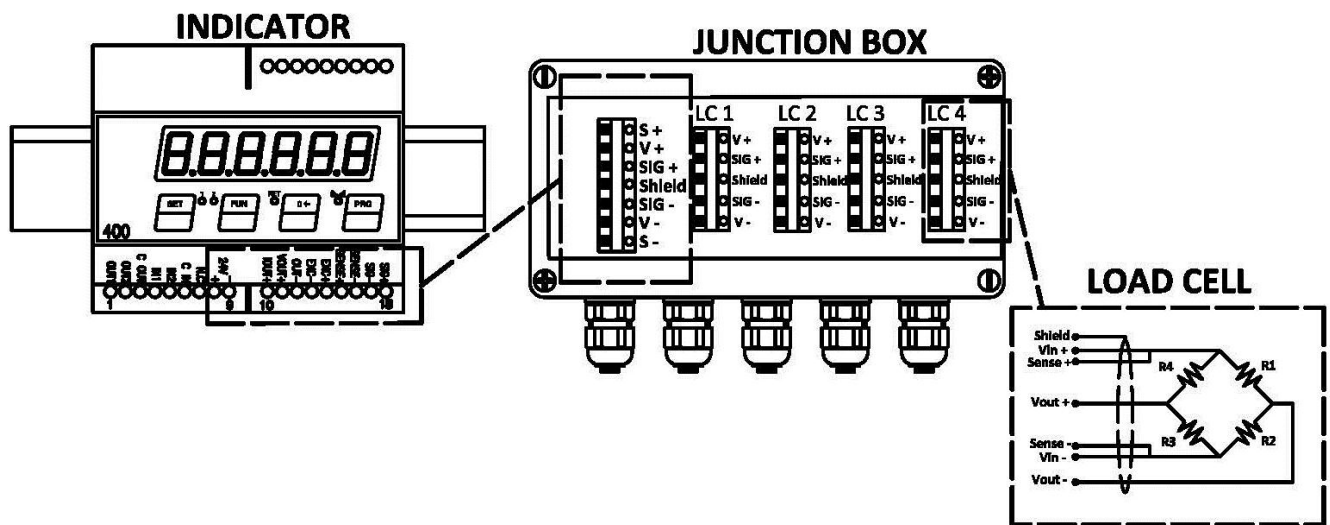


LOAD CELL-JUNCTION BOX- INDICATOR CONNECTION

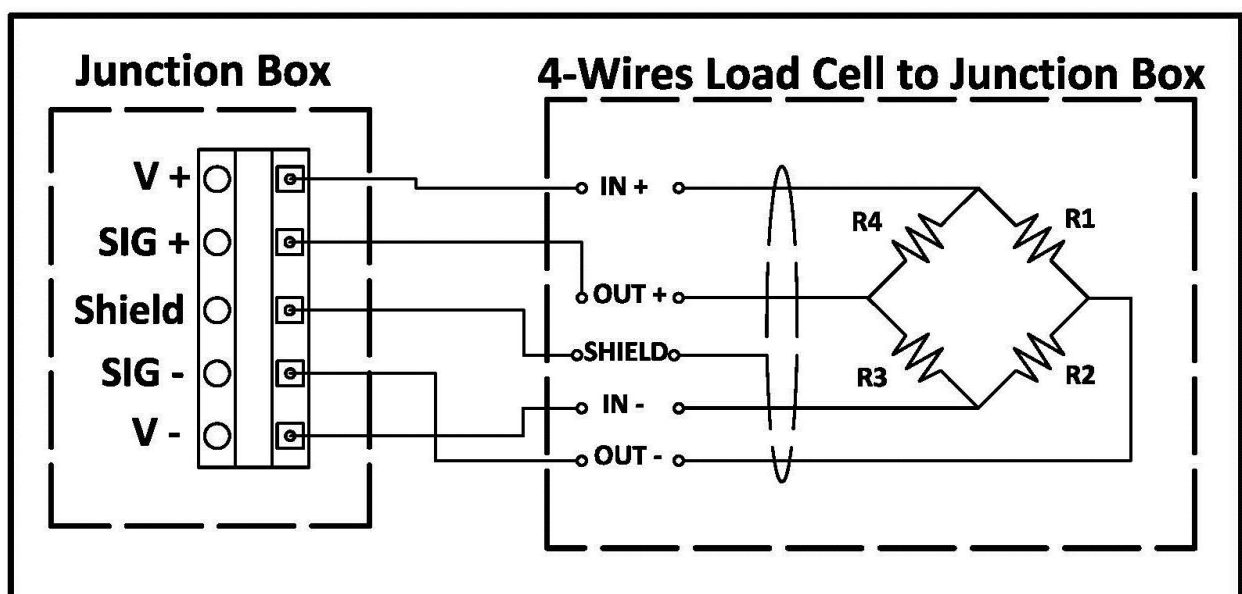
The intent of this technical note is help the user when making connections of a 4 or 6 wires UTILCELL load cell to a junction box and to a indicator types DAT, SMART, MATRIX or MATRIX II and SWIFT.

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



4-Wires load cell to a junction box connection

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

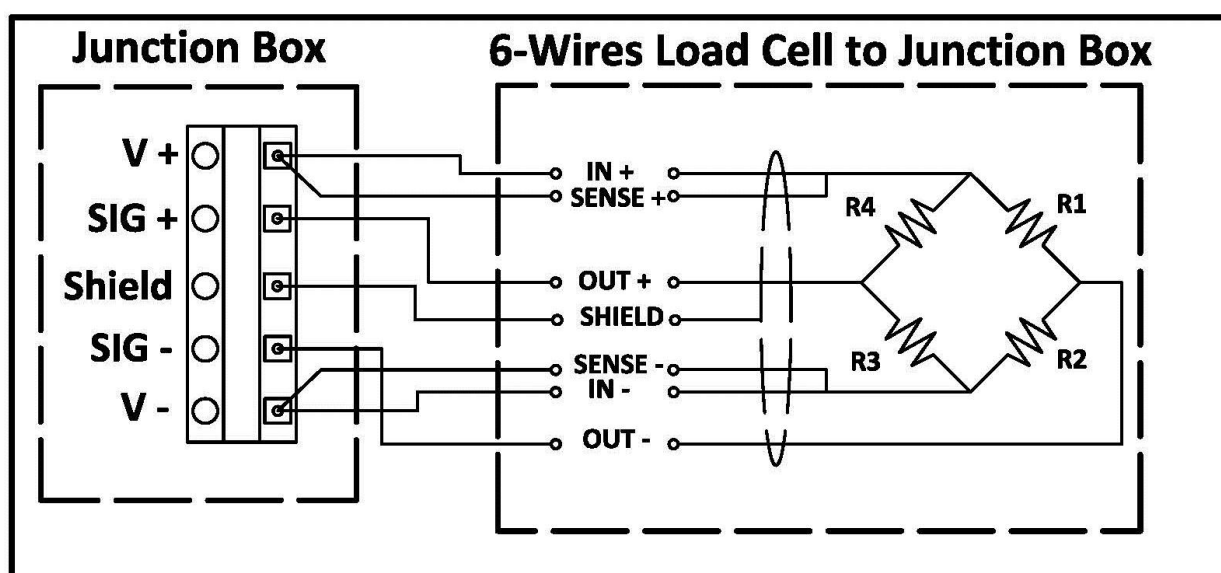


The following table displays the equivalence between load cell terminals-colors and junction box terminals.

Junction Box Input Coding	4-Wires Load Cell Coding	4-Wires UTILCELL Load Cell Color Code
V +	IN +	GREEN
SIG +	OUT +	RED
SHIELD	SHIELD	-
SIG -	OUT -	WHITE
V -	IN -	BLACK

6-Wires load cell to a junction box connection

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

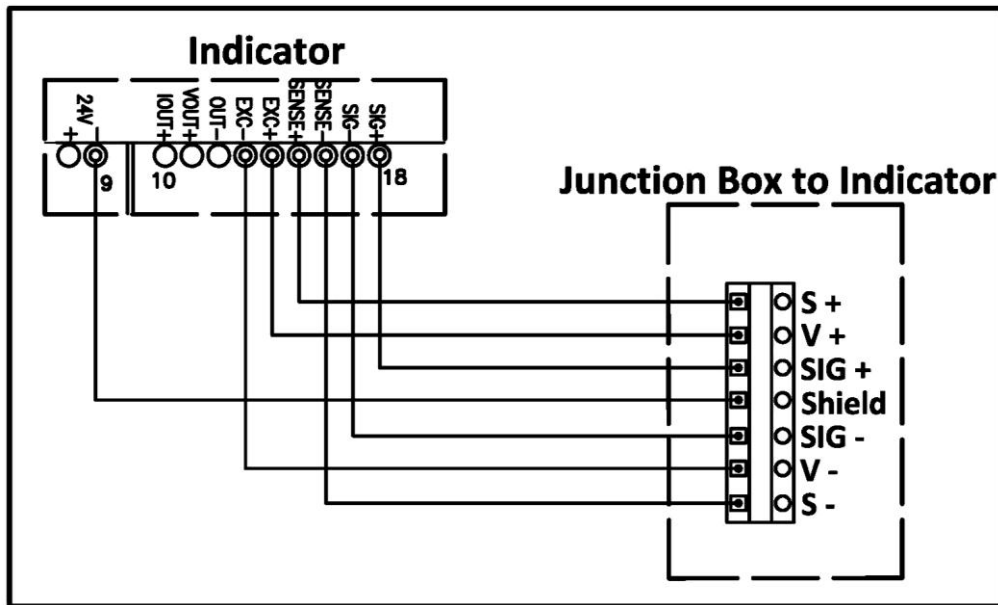


The following table shows the equivalence between load cell terminals-colors and junction box terminals.

Junction Box Input Coding	6-Wires Load Cell Coding	6-Wires UTILCELL Load Cell Color Code
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 have to connect the pin out as shown in the next figure.

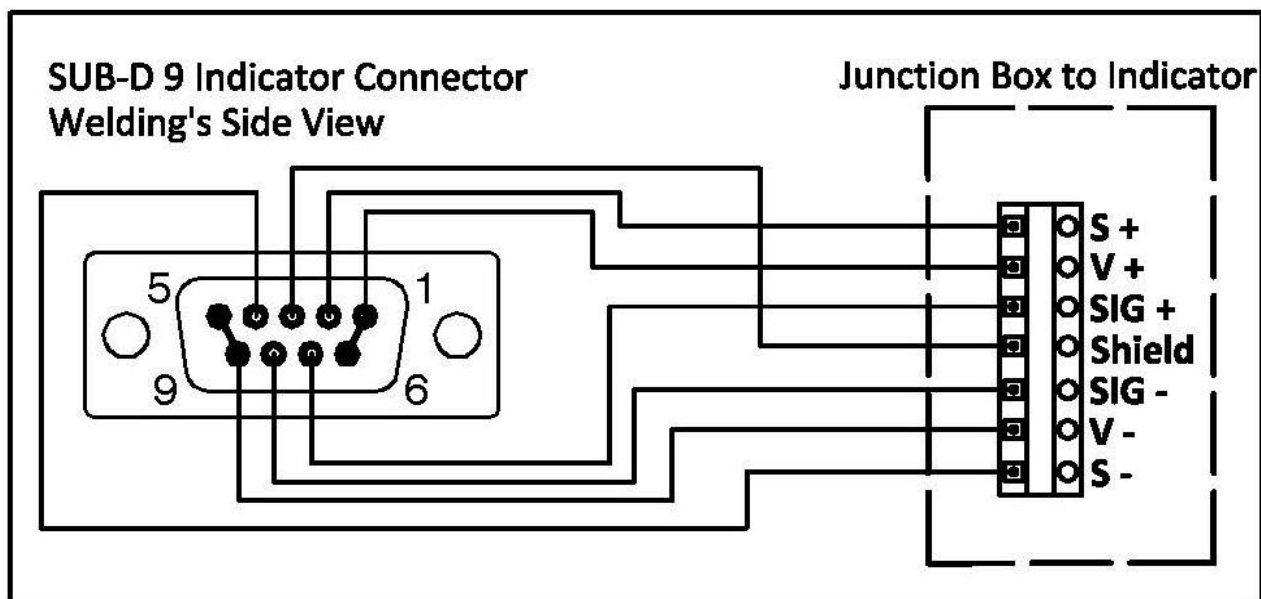


The following table shows the equivalence between DAT indicator, junction box, and load cell terminals.

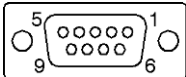
DAT 400 Indicator Coding		Junction Box Coding Output	UTILCELL Load Cell Coding	UTILCELL Load Cell Color Code
PIN	Signal			
13	EXC –	V –	– IN	BLACK
14	EXC +	V +	+ IN	GREEN
15	SENSE +	S +	+ SENSE	BLUE
16	SENSE -	S -	– SENSE	YELLOW
17	SIG -	SIG -	– OUT	WHITE
18	SIG +	SIG +	+ OUT	RED
9	GND	SHIELD	SHIELD	-

Junction Box to SMART, MATRIX or MATRIX II Indicator connection

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.

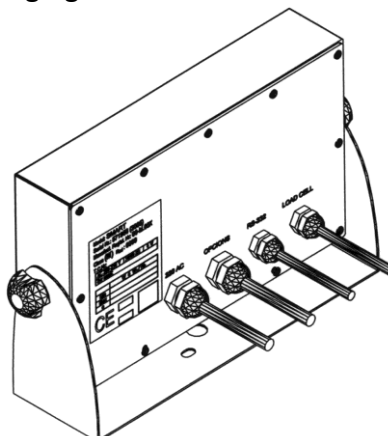


The following table shows the equivalence between junction's box terminals and SMART, MATRIX or MATRIX II indicator's terminals.

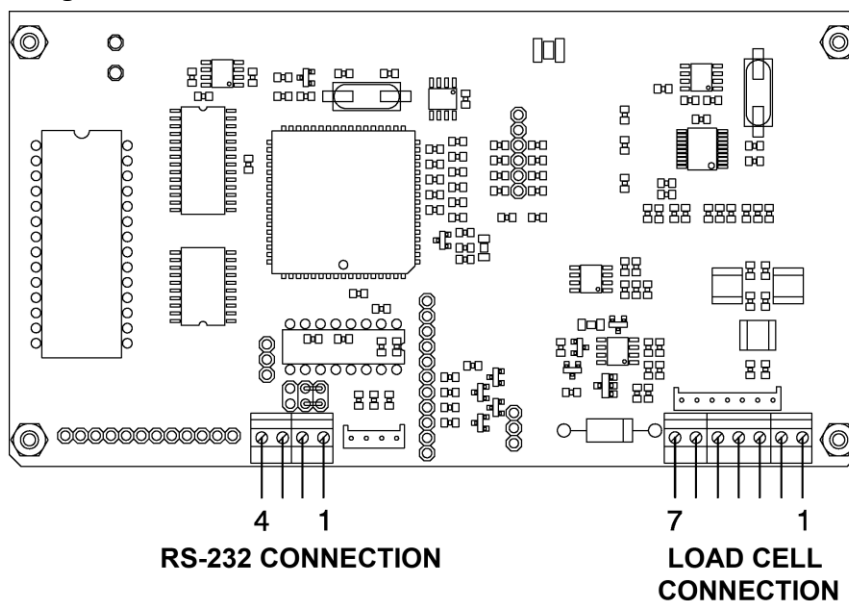
SUB-D 9 Male aerial  Pin Assignment View from welded side	Indicator Coding		Junction Box Output Coding	UTILCELL Load Cell Coding	UTILCELL Load Cell Color Coding
	PIN	Signal			
	1	EXC +	V+	+ IN	GREEN
	6				
	2	SENSE +	S+	+ SENSE	BLUE
	7	SIG +	SIG +	+ OUT	RED
	3	SHIELD	SHIELD	SHIELD	-
	8	SIG-	SIG -	- OUT	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:



We have to unscrew the rear side of the indicator and perform the wiring in the following PCB board, via the cable-glands.



For a 6 wire Load cell

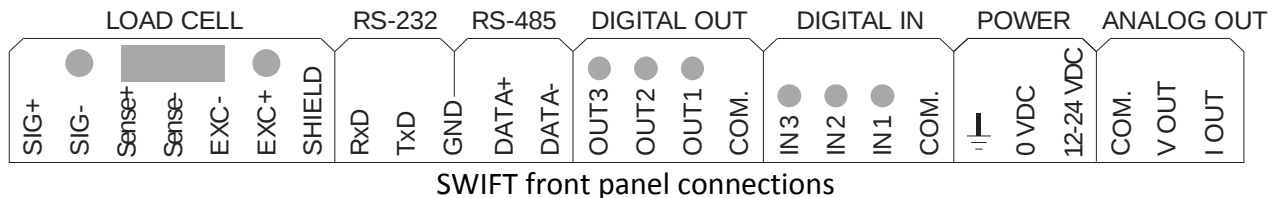
Load cell Connection			RS-232 Connection	
PIN	SIGNAL	UTILCELL Load cell Code	PIN	SIGNAL
1	SIG +	Red	1	TxD
2	SIG-	White	2	RxD
3	Shield	-	3	RTS
4	Sense +	Blue	4	GND
5	Sense -	Yellow		
6	EXC -	Black		
7	EXC +	Green		

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 Code	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 to SWIFT connection

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 Coding
SIG+	SIG+	+SIG	Red
SIG-	SIG-	-SIG	White
Sense+	SENSE+	+S	Blue
Sense-	SENSE-	-S	Yellow
EXC-	EXC-	-V	Black
EXC+	EXC+	+V	Green
SHIELD	SHIELD	SHIELD	Shield

6 wires connection cable

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	Código célula UTILCELL
SIG+	SIG+	+SIG	Red
SIG-	SIG-	-SIG	White
Sense+	SENSE+	Green (bridge with EXC+)	-
Sense-	SENSE-	Black (bridge with EXC-)	-
EXC-	EXC-	-V	Black
EXC+	EXC+	+V	Green
SHIELD	SHIELD	SHIELD	Shield

4 wires connection cable

From Utilcell hope this technical note can be of help in knowing the basic connections between a load cell to a junction box and to an indicator (DAT, SMART, MATRIX or MATRIX II), only as a guideline and not serve as a contractual specification. We reserve the right to change the content of this technical note at any time without notice.

Remaining at your disposal for any further information.