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Industrial Weighing Systems

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INNOVATIVE WEIGHING TECHNOLOGY

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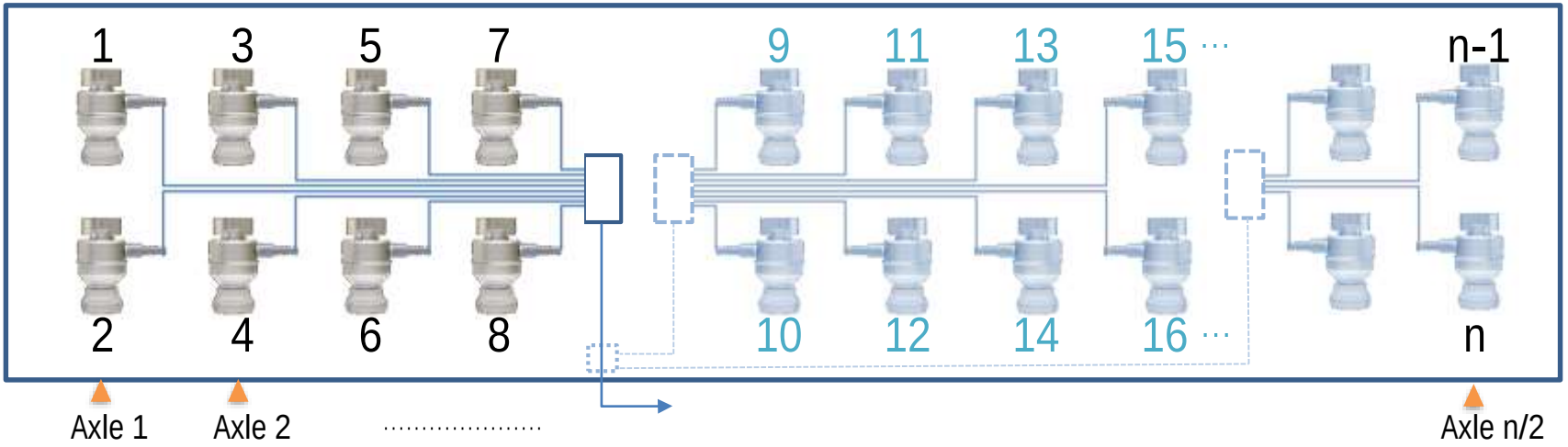
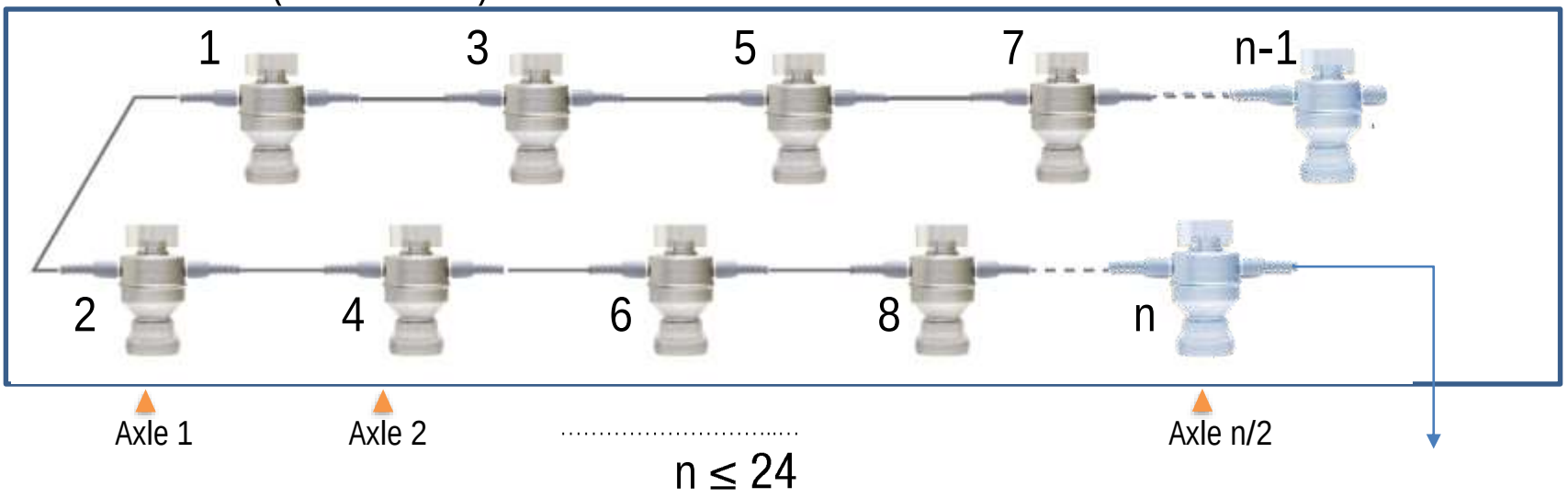
Load Cell Layouts

Vehicle Scale (BR030SD)



Vehicle Scale (BR032SD)



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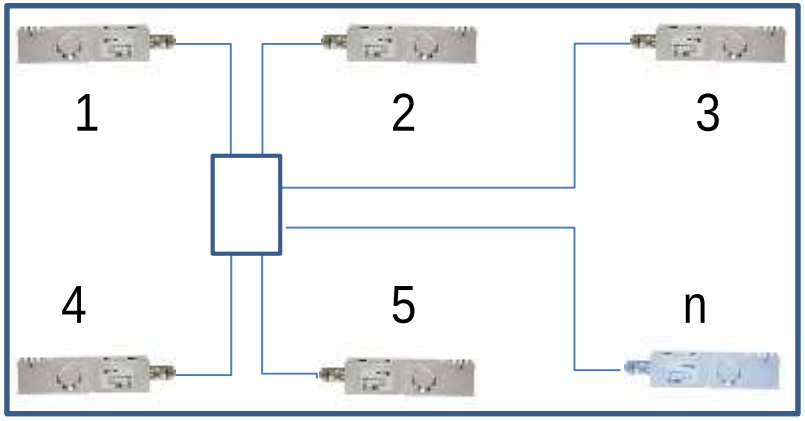
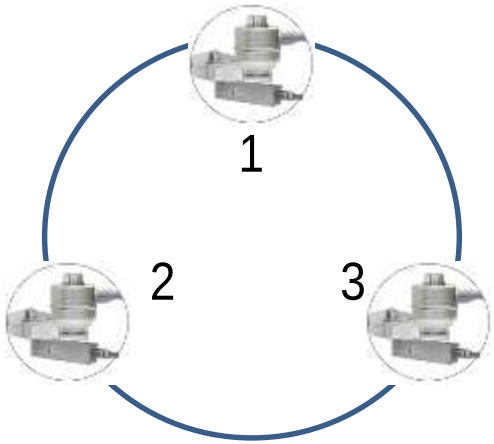
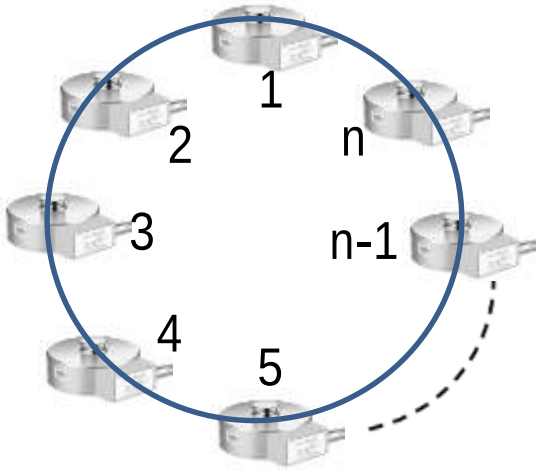
Load Cell Layouts

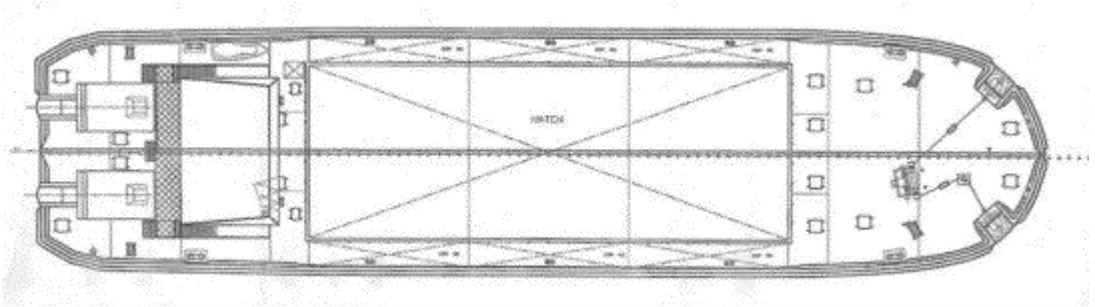
Platform Scale / Tank-Reactor Weighing (BR063SD , BR200SD)





High Capacity Silo Weighing / Special Weighing Applications





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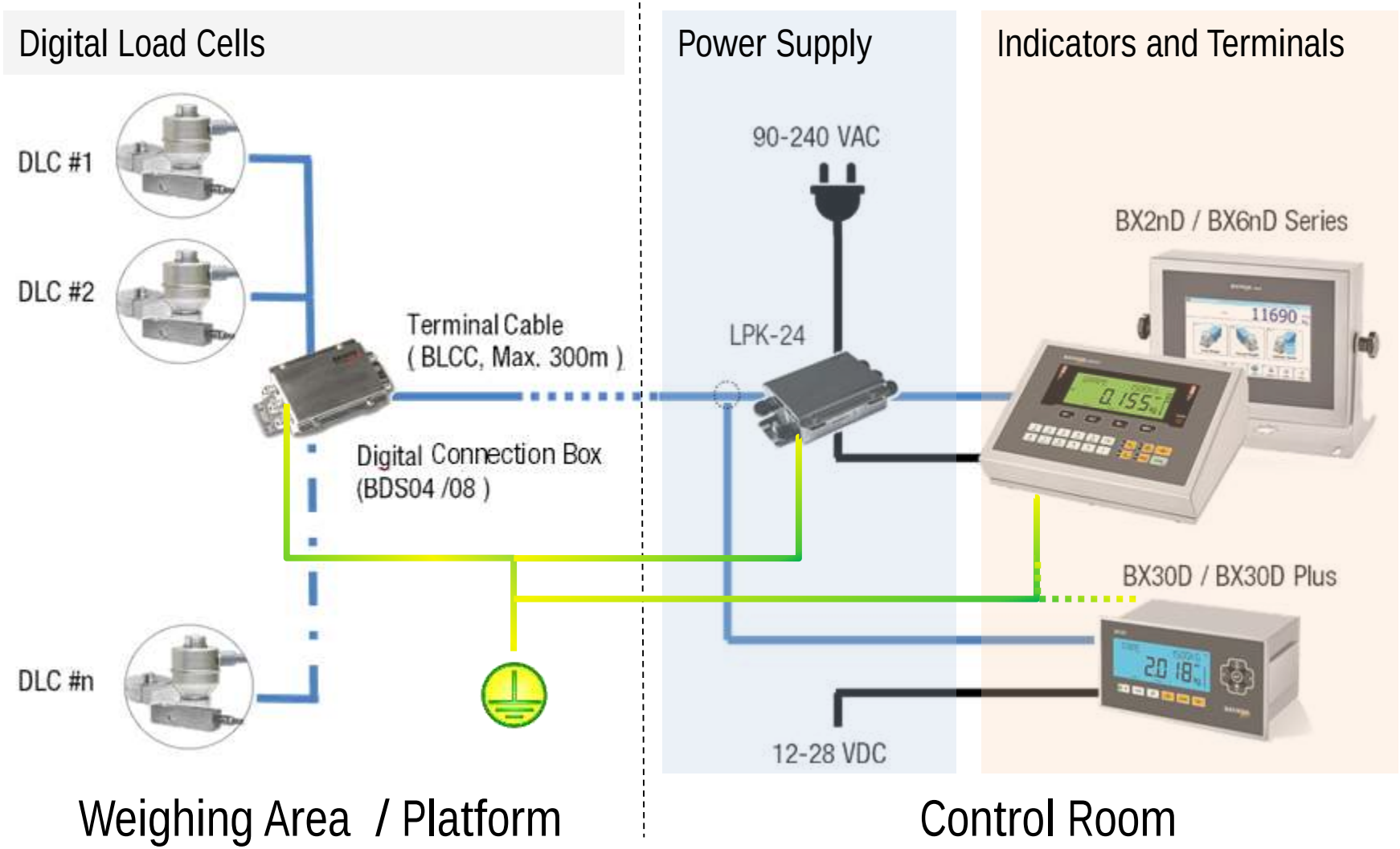
Load Cell Wiring (Parallel Network Connection)



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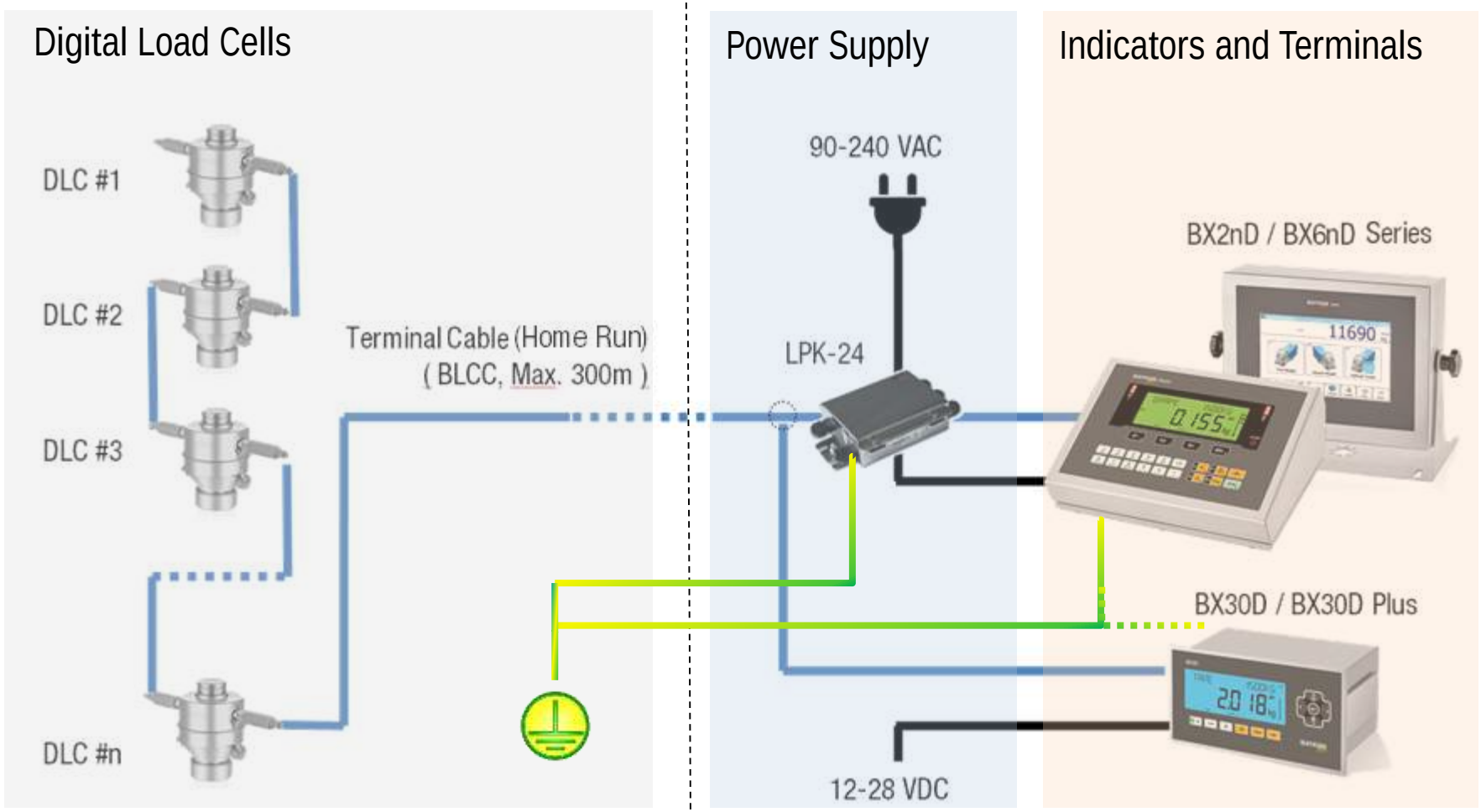
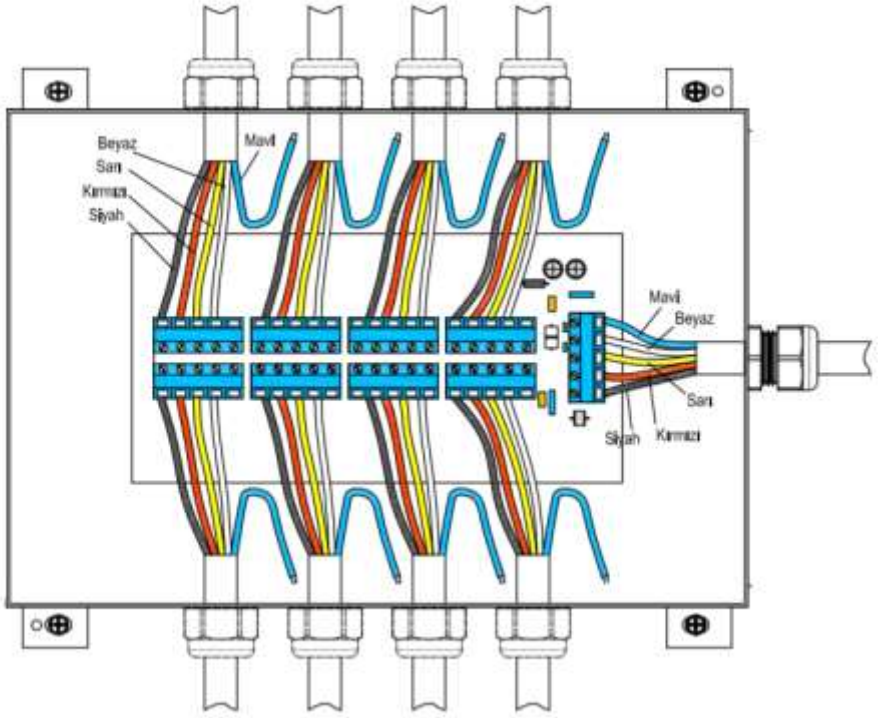
Load Cell Wiring (Serial connection BD032SD)



Addressing in Parallel Network

For BS063SD,BR200SD,BR030SD

After locating and mounting the load cells in accordance with the system requirements run the load cells cables to the connection box and connect the wires to the terminals except blue excitation wires as shown in the picture below.



Connection to LPK24 or directly to the terminal

LC Wire Color	Description
Blue	+ Excitation
Black	- Excitation
White	A
Red	B
Yellow	Shield

Addressing in Parallel Network

After checking the wiring and connections switch on the system / device and access to the programming menu.		
Indicator prompt	Action to do	Key
[532 QUANTITY :XY]	Enter the quantity of DLCs used into the scale and then press enter key.	Enter
[533 ADDRESSING]	Press enter key when this prompt is seen on the display.	Enter
[WAIT]	For a short period this message is seen. Please wait.	
[CONNECT DLC: 01]	Connect the + excitation wire (blue) of DLC #1 to the terminal marked as + E of DLC#1 terminal block in junction box. Then press enter key.	Enter
[SERIAL:]	Enter the serial number of DLC as a numerical only.	Enter
[ADDRESSING DLC]	This message is displayed for 10 seconds during addressing.	Enter
[DISCONNECT DLC: 01]	Disconnect the + excitation wire (blue) of addressed DLC.	Enter
[WAIT]	For a short period this message is seen. Please wait.	
[CONNECT DLC: 02]	Connect the + excitation wire (blue) of DLC #2 to the terminal marked as + E of DLC#2 terminal block in junction box. Then press enter key.	Enter
▬▬▬▬▬	Address all other DLCs to be addressed in the same way.	Enter
[CONNECT ALL DLC]	This message is displayed after completing all DLCs addressing . Connect the + excitation wires (blue) of all DLC to their own terminals marked as + E in junction box.	↩ x 4
[SAVE: YES]	After this message displayed you can save the changes you did into memory.	Enter

Addressing in Serial Network

Only for BR032SD ;
After locating and mounting the load cells in accordance with the system requirements ,connect the home run cable with connector on one end to the indicator or LPK24 unit.
Since Connection Box is not used in this type of connection home run cable end with connector is connected to any one of the two connectors of DLC. Then each DLC is addressed individually as in the parallel network connection.

Connection to LPK24 or to the terminal directly

LC Wire Color	Description
Blue	+ Excitation
Black	- Excitation
White	A
Red	B
Yellow	Shield

DLC Load Transfer Test (Recommended)

Internal counts of each DLCs provide important information regarding the weight distribution over each cell in the system. In a scale with good mechanical integrity these counts should be as close together as possible. After addressing, therefore, it is recommended to check the internal count of each DLCs of a scale under dead load and adjust their level by shimming. Making the corner and axle adjustment after this step would be more reliable.

Switch on the system/device when all DLCs are connected, then access to the programming menu.		
Indicator prompt	**Action to do**	**Key**
[918 DLC COUNTS]	Access to the parameter 918 and then press enter key.	Enter
[DLC COUNT 01]	Info display shows this message. Press enter to see the count value of DLC#1.	Enter
[234]	After pressing enter key the count value of DLC#1 is displayed in weighing display.	
[DLC COUNT 02]	To see the count value of DLC#2	Enter
[190]		
- - - - -	You can see all the count values of addressed DLC and then exit from the menu.	⮌

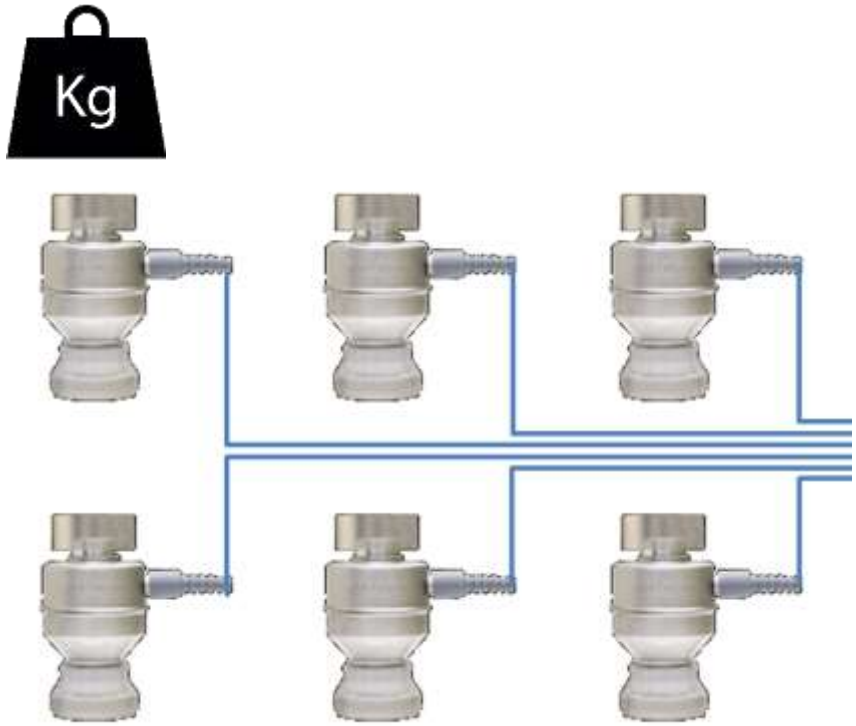
Although internal count changes according to the DLC capacity it is suitable to keep the difference within +/- 1000 band.

Example: Supposing that the count values in a weighing system with 4 DLCs are as follows:

DLC#1: 1430, DLC#2: 1620, DLC#3: 1060 and DLC#4: 200

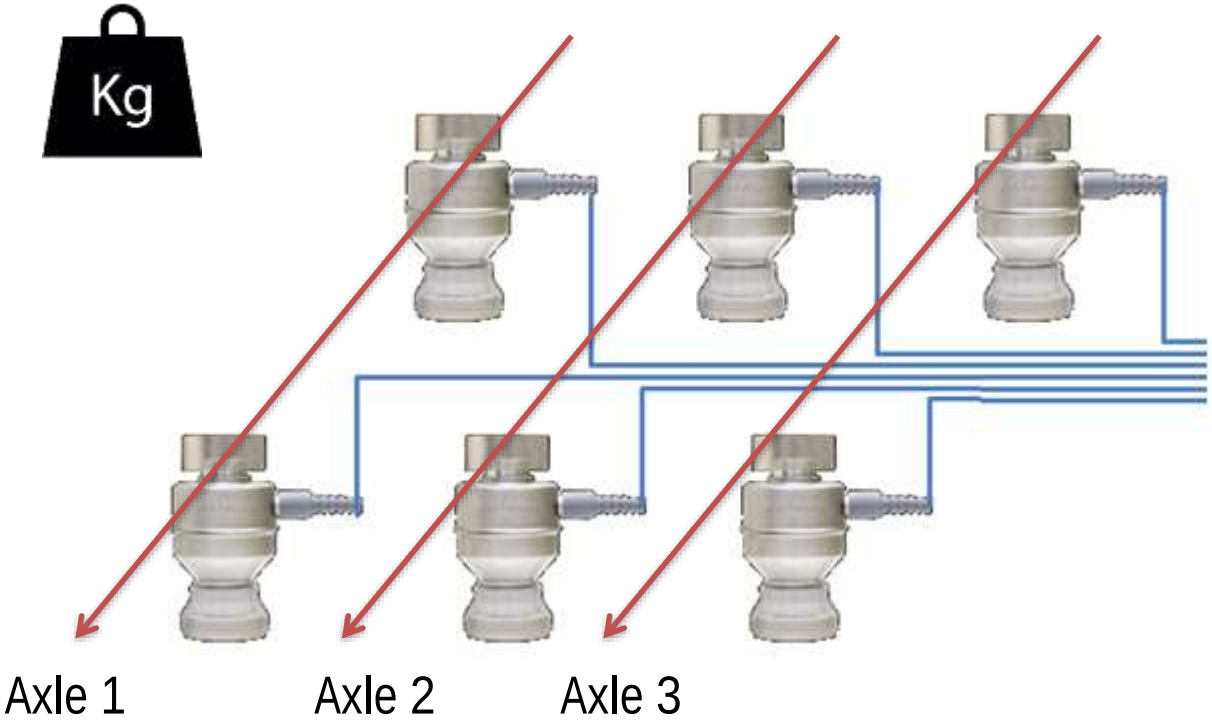
In this case there is a mechanical problem with DLC#4 installation and the load distribution should be made homogeneous by shimming.

Corner / Axle Adjustment



Corner Adjustment :
It is accomplished by placing a test weight over each load cell according to DLC address order. It is used for floor scale practically.
Net value of the test weight is not important but it is recommended that it is heavier than approximately 5% of the scale capacity.

Corner / Axle Adjustment



Axle Adjustment:
It is accomplished by placing a test load over each axle according to the address order of DLC pairs forming the axle. It is used for truck and railway scale practically.

Corner / Axle Adjustment (Automatic)

Switch on the system/device when all DLCs are connected , then access to the programming menu.		
Indicator prompt	Action to do	Key
[541 METHOD : CELL]	Select the method to be used. Cell (Corner) or Pair (Axle)	Enter
[542 AUTO ADJUST]	It is proceeded according to DLCs addresses order.	Enter
[ZERO CALIBRATION]	Zero calibration will be accomplished.	Enter
[UNLOAD THE PAN]	Unload the scale.	Enter
[WAIT]	For a short period this message is displayed. Please wait.	
[LOAD DLC NO : 01] or [LOAD PAIR NO : 01]	According to the selected method place the test load over the DLC#1 or Axle#1.	Enter
[WAIT]	For a short period this message is displayed. Please wait.	
[LOAD DLC NO : 02] veya [LOAD PAIR NO : 02]	Place the test load over the next DLC or axle.	Enter
- - - - -	Repeat the processes until all adjustments have been completed.	↩ x 4
[SAVE: YES]	After this message displayed you can save the changes you did into memory.	Enter

Corner / Axle Adjustment (Manual)

Manual corner or axel adjustment is a method that the shift coefficients of the load cells are entered manually to improve the errors raised by the small differences between corners or axles.

Switch on the system/device when all DLCs are connected , then access to the programming menu.		
Indicator prompt	Action to do	Key
[543 MANUAL ADJUS]	Access to the parameter 543 and then press enter key.	Enter
[DLC COEFF :01]	The message is displayed. Press enter key to see the coefficient #1.	Enter
[X.XXXX]	Default value is [1.0000]. But after automatic calibration this value is reevaluated automatically. If need be to change this coefficient it can be entered numerically.	Enter
[DLC COEFF :02]	Press enter key to see the coefficient #2.	Enter
	For a short period this message is displayed. Please wait.	Enter
	To escape	⮌ x 4
[SAVE: YES]	After this message displayed you can save the changes you did into memory.	Enter

eCal: Electronic Calibration

It is a kind of calibration method that doesn't require test weight. It is recommended to apply eCal after building the scale ([52- BUILD]) and corner or axle adjustment.
Accuracy ≥ % 0,1 / FS

Switch on the system/device when all DLCs are connected , then access to the programming menu.		
Indicator prompt	Action to do	Key
[613 ELECTRONIC]	Access to the parameter 613 and then press enter key.	Enter
[ZERO ADJUST]	If zero adjustment to be made and dead load will be entered manually it can be jumped to the step [ESTIM DEAD LOAD] with ↑ key and the value can be entered*.	Enter
[UNLOAD THE PAN]	Unload the scale.	Enter
[WAIT]	For a short period this message is displayed. Please wait.	↩
[SAVE: YES]	After this message displayed you can save the changes you did into memory.	Enter

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Cable Distances *(Lenght)*

Quantity of DLC	Total cable distance of DLC (m)	Maximum distance of terminal cable (m)
17 -20	250 ~ 320	50
13 -16	170 ~ 250	100
9 - 12	110 ~ 200	150
5 - 8	40 ~ 110	200
≤ 4	≤ 40	300

Errors

EROR CODE	DESCRIPTION	ACTION TO DO
E81 CANNOT ADDR	DLC could not addressed.	- Check the DLC connection (RS-485 & Power supply) hardware. - Check the DLC and S/N.
E82 SHIFT ADJUST	Shift adjustment is not available due to load cell coefficients are out of limits.	- Check addressing is done correctly. - Check test weight loading on the correct DLC. - Check the load cell installation and scale installation.
E83 DLC COUNT ER	No regular response from load cell	- Reenergize the indicator. - Check the DLC connection (RS-485 & Power supply). - Change load cell.
E84 SN NOT MATCH DLC yy (1)	The address and S/N of the load cell do not match.	- Check the DLC and S/N. - Reenergize the indicator. - Readdress the DLC.
E85 DLC TIMEOUT DLC yy (1)	Communication time out	- Check the DLC connection (RS-485 & Power supply) hardware. - Check the DLC and S/N.
E86 DLC COM ERR DLC yy (1)	Status error of load cell	- Change load cell.
E87 DLC UNDER DLC yy (1)	The DLC is under	- Check mechanical installation and DLC.
E88 DLC OVER DLC yy (1)	The DLC is over	- Check mechanical installation and DLC.
E89 DLC CHKSUM DLC yy (1)	Checksum error	- Check termination resistors. - Check the DLC connection (RS-485 & Power supply) hardware.
E90 DLC PWR ERR	Power supply of DLCs could not detected.	- Check the power supply connection. - Change the LPK24.
E91 DLC SYSTEM	Internal communication error between the DLC board and the indicator.	- Change the DLC board. - Change the main board.
E92 DLC UNMATCH	Capacity of the load cell is different.	- Check capacity of the DLC
E81 CANNOT ADDR	DLC could not addressed.	- Check the DLC connection (RS-485 & Power supply) hardware. - Check the DLC and S/N.