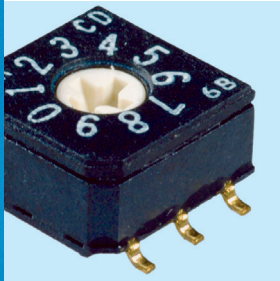


The Precise Link

Precision Junction Boxes



Accuracy and Stability

All components are designed for high accuracy and long term stability. Precision SMT resistors and gold plated switches guarantee trouble free operation.



CalFree™

Precision Junction boxes can be set to be absolutely neutral. Thus initial shift error is low and all boxes are capable for CalFree™ test weight free calibration.



Easy Shift Adjustment

All components for shift adjustment are on board, no soldering or additional resistors are needed. Rotary switches can be operated like trim pots without their trade-offs in terms of stability and temperature impact.



Stainless Steel Housing

All junction boxes are made from stainless steel and provide best reliability even in harsh industrial environments. Version in IP65 and IP69K are available.



Precision Junction Boxes When Accuracy Matters

Junction boxes are often underestimated in terms of their accuracy impact. Precision junction boxes combine the best of two worlds. Discrete resistors provide high accuracy and long term stability while rotary switches combine them to a simple user interface similar to trim pots.

- Accurate and stable discrete resistors
- Rotary switches for easy user interface
- No soldering, no loose resistors
- Neutral initial setup for CalFree™ calibration
- 304 or 316 stainless steel enclosure
- IP65 or IP69K protection class
- Hygienic Version - NSF and GMP approved
- Easy connection to screw type terminal blocks
- ATEX/IECEX Version Zone 1/21 & 2/22

Precision Junction Boxes Specifications

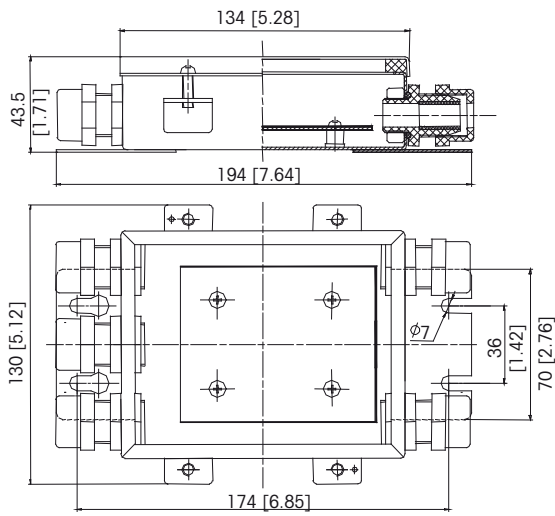
Parameter	Unit of measure	Specification								
		Precision Junction Box						Precision Junction Boxes ATEX		
Type		Precision Junction Box						Precision Junction Boxes ATEX		
Model No.		AJB540S	AJB641S	AJB841S	AJB541M	AJB540L	AJB941M	AJB641SX	AJB841SX	
Size		Small		Medium	Large	Medium	Small			
Application		Standard		High corrosion	Large size	Conduit	Hygienic	Hazardous	Hazardous, high corrosion	
Hygienic approvals		NSF and GMP certified								
Item No.		30206112	30206108	30070226	30206111	30206113	30219978	30070224	30070225	
No. of load cells		2, 3, 4								
Load cell resistance range	Ω	120 - 1200		120 - 4000		120 - 1200	120 - 1200			
Shift adjustment	Method	Encoding rotary switches with precision discrete resistors								
	Initial Error ¹⁾	< 1/6000								
	Range (nominal)	%	1.3		1.3 (3.5 extended @ 1000Ω)		1.3			
	Number of steps	256								
	Smallest adjustment step	1/19000								
	Shift adjustment methods available	On-load – Adjustment without calculation similar to trim pot adjustment Initial – Compensation of multiple junction box connection								
Pair/Section shift adjustment	Yes									
Legal for trade sealing	Sealing wire or sticker									
Temperature range	Operating	-30 ~ +65 (-4 ~ +150)						-30 ~ +60 (-4 ~ +140)		
	Safe storage	-40 ~ +80 (-40 ~ +176)								
Excitation voltage	Recommended	10								
	Max.	V AC/DC	20					17.4		
Insulation resistance @50VDC	MΩ	> 5000								
Breakdown voltage	V AC	> 500								
Earthing/ Grounding		Via mounting screws	Dedicated stud	Via mounting screws	Dedicated stud	Via mounting screws	Optional - not required			
ATEX approval ⁴⁾	Number, Cat. 2							DEKRA 03ATEX1396X		
	Ratings, Cat. 2							II 2 G Ex ia IIC T4 Gb II 2D Ex ib IIIC T70 °C ... T90 °C Db		
	Entity parameters, Cat. 2							Ui = 17.3V, Ii = 300mA, Pi = 1.2W, Ci=Li= 0 Ui = 6.0V, Ii = 200mA, Pi = 1.2W, Ci=Li=0		
	Number, Cat. 3							DEKRA 03ATEX1397X		
	Ratings, Cat. 3							II 3 G Ex ia IIC T4 Gc II 3 G Ex na IIC T4 Gc II 3 D Ex tc IIIC T70 °C ... T90 °C Dc		
	Entity parameters, Cat. 3							Ui = 30V, Ii = 1A Ui = 10.5V, Ii = 500mA, Ci=0, Li=0		
IECEx approval ⁴⁾	Number							IECEx DEK 17.0047X		
	Ratings							Ex ia IIC T4 Gb, Ex ic IIC T4 Gc, Ex na IIC T4 Gc Ex ib IIIC T70 °C ... T90 °C Db, Ex tc IIIC T70 °C ... T90 °C Dc		
Material	Enclosure	Stainless steel		Stainless steel 316	Stainless steel		Stainless steel, FDA certified	Stainless steel	Stainless steel 316	
	Cable entry fitting	Polyamide (Nylon)		Nickel plated brass	Polyamide (Nylon)	Carbon steel, zinc plated	Stainless steel	Polyamide (Nylon)	Nickel plated brass	
Protection	Type	Rubber gasket					Silicon	Rubber gasket		
	IP rating	IP65	IP69K		IP65		IP69K	IP69K		
	NEMA rating	NEMA 4/4X								
Weight, nominal	kg (lb)	1.1	1.2	1.7	3.8	3.0	1.2			
Load cell cable	No. conductors	4 and 6 + Shield								
	Conductor size	mm2 (AWG) ≤ 3 (12)								
	Diameter	mm (in)	4-8 (0.16-0.32)	3-6.5 (0.12-0.26)	4.8-6.5 (0.19-0.26)		"5.0-5.4 (0.197-0.21)"	3-6.5 (0.12-0.26)		
Home-Run and AUX cable	No. conductors	6 + Shield								
	Conductor size	mm2 (AWG) ≤ 3 (12)								
	Diameter	mm (in)	6-12 (0.24-0.48)	4-8 (0.16-0.32)	6.4-9.5 (0.25-0.48)		5.8-10.4 (0.23-0.41)	4-10 (0.16-0.4)		
Extension via AUX port	Possible	No	Yes			No	Yes	Yes		
	Max. no. of load cells for 1st box		4				4	4		
	AUX cable max. recommended wire resistance ²⁾	Ω		0.5	1.5		0.5	0.5		
	AUX cable max. recommended length of 0.14mm2 (AWG24) ²⁾	m (ft)		2.5 (8.3)	8 (26)		2.5 (8.3)	2.5 (8.3)		
	AUX cable max. recommended length of 0.5mm2 (AWG20)	m (ft)		10 (33)	30 (100)		10 (33)	10 (33)		
CalFree™ calibration without test weights	Suitable ³⁾	Yes								
	Impact of J box on signal	%	< 0.1%							
	AUX cable max. recommended wire resistance for CalFree™	Ω		0.05			0.05	0.05		
	AUX cable max. recommended length of 0.5mm2 (AWG20)	m (ft)		1.5 (5)			1.5 (5)	1.5(5)		

1) Impact of junction box due to resistor tolerances
 2) Assuming 50 % shift adjustment range left
 3) In conjunction with MT CalFree™ terminals
 4) See certificate for complete information

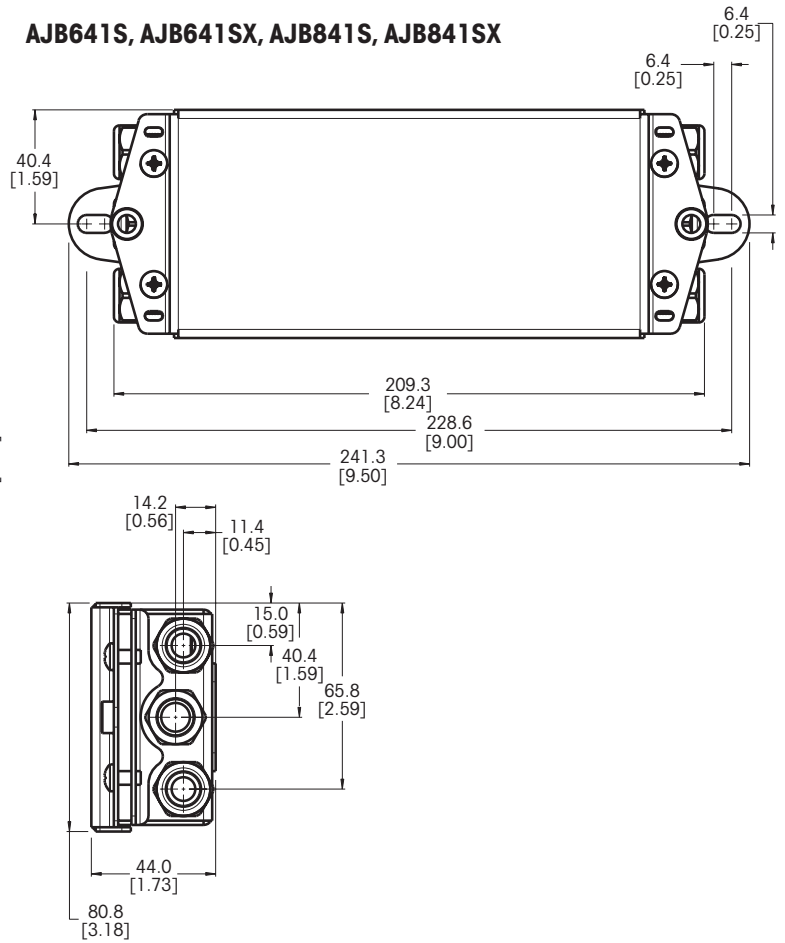


Dimensional Drawings mm [in]

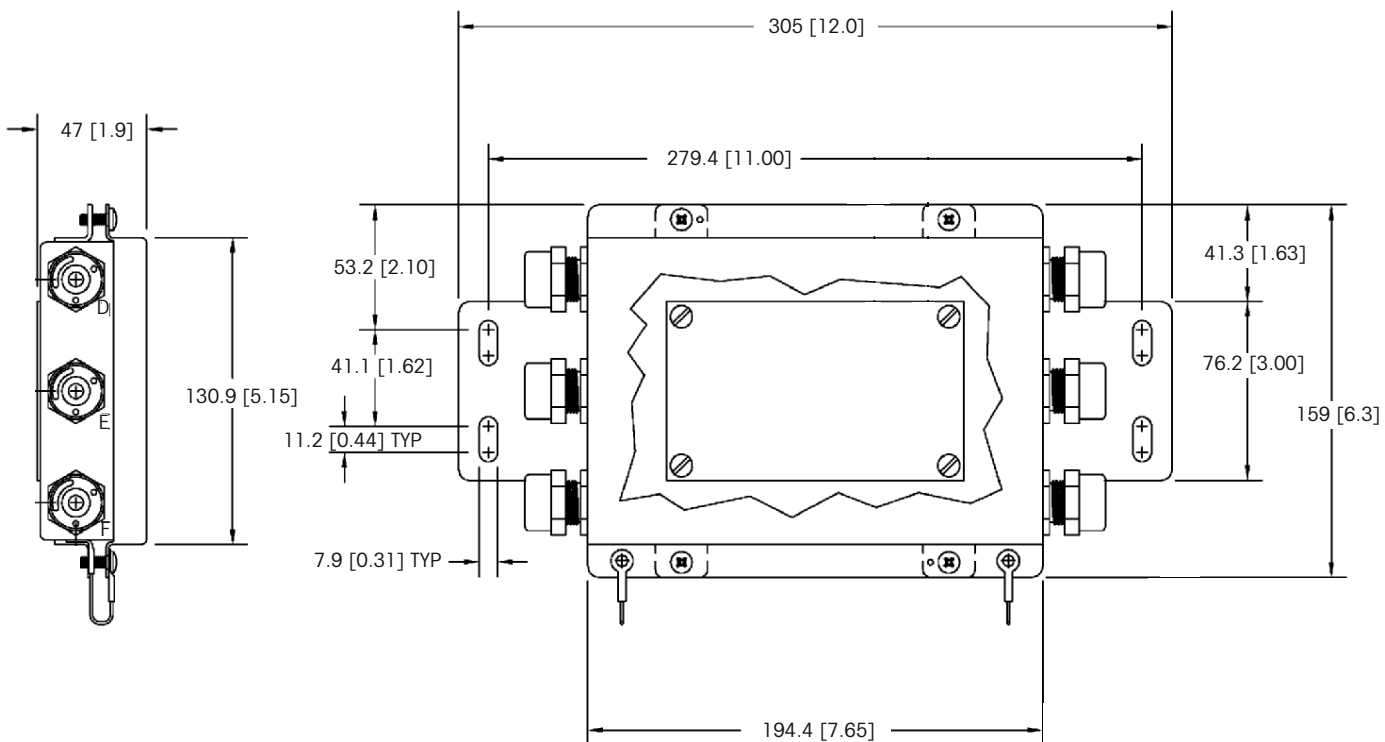
AJB540S



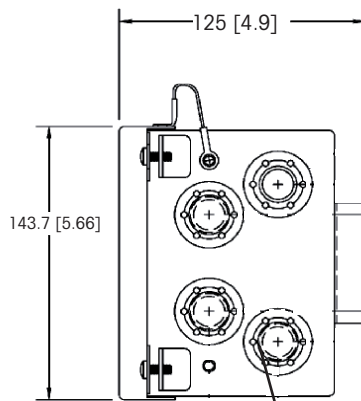
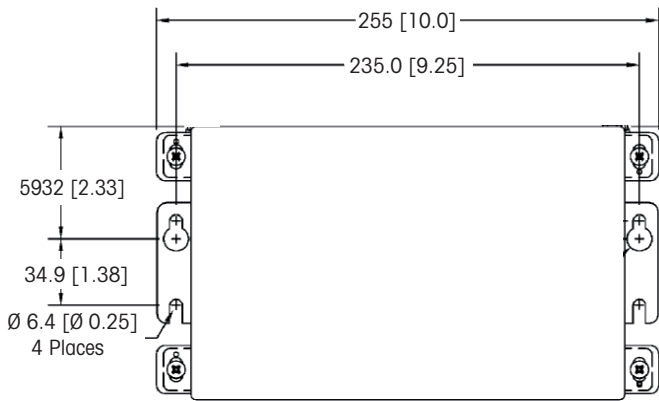
AJB641S, AJB641SX, AJB841S, AJB841SX



AJB541M



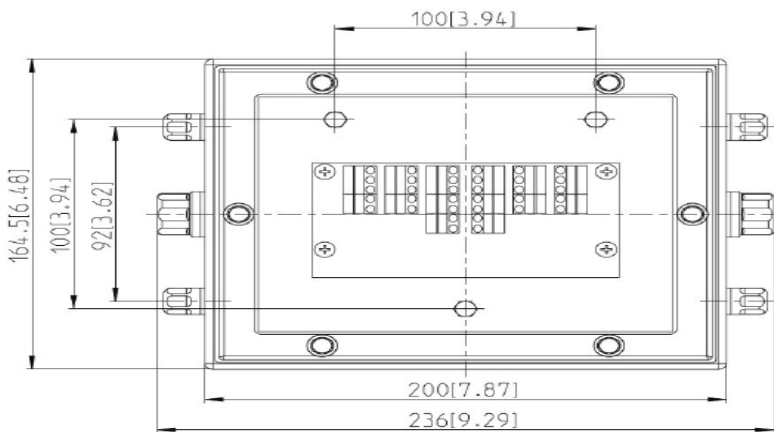
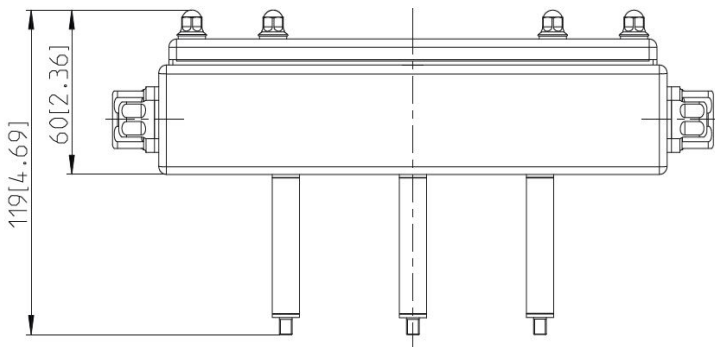
AJB540L



2 Hole plugs supplied to close any unused cable entry fittings.

For threaded conduit with 1/2"-14 NPT thread

AJB941M



Precision Junction Boxes Order Information

Model	Description	Item No.
AJB540S	Precision Junction Box, small, IP65	30206112
AJB641S	Precision Junction Box, small, IP69K	30206108
AJB841S	Precision Junction Box, small, IP69K, 316SS	30070226
AJB541M	Precision Junction Box, medium, IP65	30206111
AJB540L	Precision Junction Box, large, IP65	30206113
AJB941M	Precision Junction Box, medium, hygienic, IP69K	30219978
AJB641SX	Precision Junction Box, small, ATEX/IECEX, IP69K	30070224
AJB841SX	Precision Junction Box, small, ATEX/IECEX, IP69K , 316SS	30070225

Global Approvals

The Precision Junction Box is provided with all listed approvals. No need to think about options and additional charges. Simplifies the conduct of global business, order processing and service-part stocking.



Weighing Electronics

METTLER TOLEDO offers a complete family of electronics from simple weighing to application solutions for filling, stock control, batching, formulation, counting, checkweighing.



METTLER TOLEDO Service

Our extensive service network is among the best in the world and ensures maximum availability and service life of your product.

METTLER TOLEDO Group

Industrial Division
Local contact: www.mt.com/contacts

Subject to technical changes
© 11/2021 METTLER TOLEDO. All rights reserved
Document No. 44098448 B
MarCom Industrial

www.mt.com

For more information

