# FIRST AMENDMENT TO AGREEMENT FOR GOODS AND SERVICES (Magnetically Actuated 38kV 12/2000A Outdoor Vacuum Circuit Breaker)

THIS FIRST AMENDMENT ("Amendment") to the Agreement for Goods and Services (Magnetically Actuated 38kV 12/2000A Outdoor Vacuum Circuit Breaker) is made as of \_\_\_\_\_\_\_, 2021, by and between the City of Lake Worth Beach, Florida, a municipal corporation of the State of Florida ("CITY") and **ABB DE, Inc.**, a Florida Corporation ("CONTRACTOR").

WHEREAS, on September 13, 2018, based upon a competitive procurement, the CITY and CONTRACTOR entered into the Agreement for Goods and Services for the CONTRACTOR to provide Magnetically Actuated 38kV 12/2000A Outdoor Vacuum Circuit Breaker to the CITY (the "Agreement");

WHEREAS, the Agreement had an initial two (2) year term with option for two (2) additional one (1) year renewals; and

WHEREAS, the CONTRACTOR has provided the new price schedule for the renewal term which is attached hereto and incorporated herein as **Exhibit "1"**; and

WHEREAS, the CITY and CONTRACTOR wish to increase the annual not to exceed amount by One Hundred Thousand Dollars (\$100,000) per fiscal year; and

WHEREAS, the CITY and the CONTRACTOR wish to renew the Agreement for an additional year and otherwise amend the Agreement as set forth herein; and

**WHEREAS**, the CITY finds amending the Agreement as set forth herein is in the best interest of the CITY and serves a valid public purpose.

**NOW, THEREFORE,** in consideration of the mutual promises contained herein, the sufficiency of which is hereby acknowledged by each party hereto, the CITY and the CONTRACTOR agree to amend the Agreement, as follows:

1. **Recitals.** The above recitals are true and correct and are incorporated herein by reference.

2. **Term.** The CITY and the CONTRACTOR agree to extend the term of the Agreement through to September 13, 2021.

3. **Fee.** Section 5 of the Agreement is amended to replace Exhibit "B" attached to the Agreement with Exhibit "1" attached to this Amendment. For the term of this Amendment, the City shall pay the fee set forth in Exhibit "1".

4. **Maximum Costs**. Section 6 of the Agreement, regarding the maximum cost to the CONTRACTOR shall be amended to the total amount not to exceed Three Hundred Thousand Dollars (\$300,000.00) for the term of this Amendment.

5. Entire Agreement. The CITY and the CONTRACTOR agree that the Agreement and this Amendment set forth the entire agreement between the parties, and that there are no promises or understandings other than those stated herein. None of the provisions, terms and conditions contained in this Amendment may be added to, modified, superseded or otherwise altered, except by written instrument executed by the parties hereto. All other terms and conditions of the Agreement (except as amended herein) remain in full force and effect.

6. **Counterparts.** This Amendment may be simultaneously executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument. Either or both parties may sign this Amendment via facsimile, email or electronically and such signature is as valid as the original signature of such party.

# 7. Scrutinized Companies.

a. CONTRACTOR certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List and are not engaged in the boycott of Israel. Pursuant to section 287.135, Florida Statutes, the City may immediately terminate this Agreement at its sole option if the CONTRACTOR or any of its subcontractors are found to have submitted a false certification; or if the CONTRACTOR or any of its subcontractors, are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of this Agreement.

b. If this Agreement is for one million dollars or more, the CONTRACTOR certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan List, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged in business operations in Cuba or Syria as identified in Section 287.135, Florida Statutes. Pursuant to Section 287.135, the City may immediately terminate this Agreement at its sole option if the CONTRACTOR, or any of its subcontractors are found to have submitted a false certification; or if the CONTRACTOR or any of its subcontractors are placed on the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or are or have been engaged with business operations in Cuba or Syria during the term of this Agreement.

c. The CONTRACTOR agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

d. The CONTRACTOR agrees that the certifications in this section shall be effective and relied upon by the CITY for the term of this Agreement, including any and all renewals.

e. The CONTRACTORR agrees that if it or any of its subcontractors' status changes in regards to any certification herein, the CONTRACTOR shall immediately notify the CITY of the same.

f. As provided in Subsection 287.135(8), Florida Statutes, if federal law ceases to authorize the above-stated contracting prohibitions then they shall become inoperative.

8. **E-Verify.** Pursuant to Section 448.095(2), Florida Statutes, beginning on January 1, 2021, the CONTRACTOR shall:

a. Register with and use the E-Verify system to verify the work authorization status of all newly hired employees and require all subcontractors (providing services or receiving funding under this Agreement) to register with and use the E-Verify system to verify the work authorization status of all the subcontractors' newly hired employees;

b. Secure an affidavit from all subcontractors (providing services or receiving funding under this Agreement) stating that the subcontractor does not employ, contract with, or subcontract with an "unauthorized alien" as defined in Section 448.095(1)(k), Florida Statutes;

c. Maintain copies of all subcontractor affidavits for the duration of this Agreement and provide the same to the CITY upon request;

d. Comply fully, and ensure all of its subcontractors comply fully, with Section 448.095, Florida Statutes;

e. Be aware that a violation of Section 448.09, Florida Statutes (Unauthorized aliens; employment prohibited) shall be grounds for termination of this Agreement; and,

f. Be aware that if the CITY terminates this Agreement under Section 448.095(2)(c), Florida Statues, the CONTRACTOR may not be awarded a contract for at least 1 year after the date on which the Agreement is terminated and will be liable for any additional costs incurred by the CITY as a result of the termination of the Agreement.

# REST OF PAGE INTENTIONALLY LEFT BLANK SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties hereto have made and executed this Amendment to the Agreement for Goods and Services (Magnetically Actuated 38kV 12/2000A Outdoor Vacuum Circuit Breaker) on the day and year first above written.

# **CITY OF LAKE WORTH BEACH, FLORIDA**

By: \_\_\_\_\_\_\_Betty Resch, Mayor

ATTEST:

[Corporate Seal]

By:

Deborah M. Andrea, City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

# APPROVED FOR FINANCIAL SUFFICIENCY

Glen J. Torcivia, City Attorney By:

By:

y: \_\_\_\_\_\_ Bruce T. Miller, Financial Services Director

ABB DE	. INC.	t.
	Ismael	Digitally signed by Ismael Castillo DN: cn=Ismael Castillo, ou=Normal
By:	Castillo	Od=Normal Date: 2021.03.04 13:45:30 - 05'00'
Print Nar	ne: Ismael Ca	stillo
Title:	Complex Pro	posals Specialist

STATE OF FLORIDA COUNTY OF PALM BEACH, Servel,

THE FOREGOING instrument was acknowledged before me by means of • physical presence or • online notarization on this <u>St</u> day of <u>Menun</u> 2021, by <u>Usman</u>, as the <u>Constructory of Speculative</u>] of ABB Inc., a Florida Corporation, who is personally known to me or who has produced Alorida ones is unas identification, and who did take an oath that he or she is duly authorized to execute the foregoing instrument and bind the CONTRACTOR to the same.

	Debtaile David	
	Notary Public Signature	
Notary Seal:	Notary Public State of Florida	
	Bobbitea Daties	
	Expires 07/26/2021	

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Exhibit "1" Price Schedule (13 Pages)



Commercial and Technical Tender ABB Negotiation <u>Number:QT</u>-21-01887510.A Equipment: R-MAG<sup>®</sup> Outdoor Dead Tank Breaker

1/27/2021

This proposal offers the market leading circuit breaker, the ABB R-MAG. ABB's R-MAG has over 10 years of field proven experience and over 16,000 installations. ABB is the only company to offer a full medium voltage portfolio with magnetic actuation, from 15 to 38 kV. The R-MAG is designed to provide the most reliable breaker in the market, minimizing downtime, improving SAIDI measurements, and significantly decreasing maintenance costs over the lifetime of the product. ABB's R-MAG delivers quantifiable value in the following areas:

#### Increased reliability

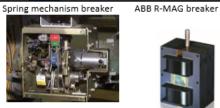
- Optimized durability with the ability to achieve 10,000 operations, five times greater than the ANSI requirement, over a temperature range of -50 to +70°C
- Minimized potential points for failure by having only one moving part in the magnetic actuator
  operating system, as opposed to spring-charged mechanisms that house over 100 moving parts
- Unparalleled performance of internal components
  - ABB magnetic actuator is rated for 100,000 operations for the 15 and 27 kV R-MAGs and 50,000 operations for the 38 kV R-MAG
  - ABB's world leading vacuum interrupters are rated for 30,000 full load operations

#### Reduced O&M

- NO MAINTENANCE is required on the magnetic actuator, as opposed to spring-charged mechanisms that are dependent on periodic maintenance to ensure proper operation.
- Minimal maintenance is required every 2,000 operations, four times the ANSI standard of 500 operations between servicing
- · Shorter maintenance times as there are no coils or motors to replace and there is no gas or oil used
- Easy plug and play design of the ED2 electronic control board for rapid replacement in the field



## Average maintenance costs savings over an estimated 30 year service life 1



Operating mechanism maintenance cost	\$6,850.00	\$0.00
General maintenance costs	\$475.00	\$142.50
Electronic control replacement costs	\$7,290.00	\$3,915.00
Lifetime maintenance costs	\$14,615.00	\$4,057.50
	A	

Lifetime O&M savings per R-MAG Breaker \$10,557.50

ABB's R-MAG has over 10 years of proven experience with over 16,000 installations. The R-MAG comes with a 5-year comprehensive warranty and 24 hour / 7 day a week customer service.

ABB is ready to support this proposal with technical application experts, spare parts, training, and support services to ensure the ease of installation and the reduction of the total cost of ownership. Thank you in advance for considering this proposal. Please do not hesitate to contact ABB with any questions

Best Regards,

Ismael Castillo ABB Inc. 655 Century Point Lake <u>Mary.</u> 32746-2137 United States Phone: Email: ismael.castillo@us.abb.com



# **Commercial and Technical Tender**

ABB Inc. 655 Century Point Lake Mary, FL 32746 Tel: 407-732-2000

Date:	1/27/2021
Tender ID:	QT-21-01887510.A
Account manager:	
Valid through:	2/26/2021
Specifications:	
Revision:	А

Prepared for: CITY OF LAKE WORTH BEACH

7 N Dixie Hwy Lake Worth Beach Florida, 33460-3725 Prepared by:

Ismael Castillo ABB Inc. 655 Century Point Lake Mary, 32746-2137 United States Email: ismael.castillo@us.abb.com



# Pricing

Standard Line Item:

		Product Type		Item Total
			(USD)	(USD)
1		ANSI Dead Tank Vacuum	36,724.00	36,724.00
	1441	Magnetic Circuit Breaker R-		
		MAG		
	01			
		MB3015DMMSH5KBZ4		
		Key ratings:		
		<b>2</b> .		
		Customer Product ID:		
		, 5		
		Interrupting current: 31.5		
		Standard lead time*		
		<ul> <li>20 weeks with approval</li> </ul>		
		drawings		
1	14.1.7		38,998.00	38,998.00
	1111			
		MAG		
	0 /	APP Product ID:		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
		MB50250003H5K824		
		Key ratings:		
		ANSI outdoor magnetically		
		actuated vacuum circuit		
		Customer Product ID:		
		, .		
		Current: 2000A		
		BIL: 200		
		4		
	1	1	ANSI outdoor magnetically actuated vacuum circuit breaker R-MAG <sup>®</sup> Customer Product ID: Primary Voltage: 38 Current: 1250A BIL: 200 Interrupting current: 31.5 Standard lead time* • 20 weeks with approval drawings • 15 weeks with approval drawings and an existing bill of material *See full details in the Delivery section in the Terms and Conditions 1 ANSI Dead Tank Vacuum Magnetic Circuit Breaker R- MAG ABB Product ID: MB3025DUUSH5KB24 Key ratings: ANSI outdoor magnetically actuated vacuum circuit breaker R-MAG <sup>®</sup> Customer Product ID: Primary Voltage: 38	ABB Product ID: MB3015DMMSH5KB24 Key ratings: ANSI outdoor magnetically actuated vacuum circuit breaker R-MAG <sup>9</sup> Customer Product ID: Primary Voltage: 38 Current: 1250A Bil: 200 Interrupting current: 31.5 Standard lead time* . 20 weeks with approval drawings . 15 weeks without approval drawings . 15 weeks without approval drawings and an existing bill of material *See full details in the Delivery section In the Terms and Conditions MB3025DUUSH5KB24 Key ratings: ANSI Outdoor magnetically actuated vacuum circuit breaker R-MAG <sup>9</sup> Customer Product ID: Primary Voltage: 38 Current: 2000A BIL: 200



## Interrupting current: 31.5

Standard lead time\* • 20 weeks with approval drawings • 15 weeks without approval drawings and an existing bill of material \*See full details in the Delivery section in the Terms and Conditions

Total sale price (USD)

75,722.00

5



## **Technical Data Sheet**

# Item 2 (Standard Line Item)

ABB Product ID: N	AB3015DMMSH5KBZ4
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Type Types Rating Voltage BIL Current	R-MAG MB3015 - 38 kV 1250 Amp 200 kV BIL 31.5 kA 38 kV
Voltage BIL	
BIL	38 kV
	2011
Current	200 kV BIL
	1250A
Interrupting Current	31.5
Power Frequency	60 Hz
Auxiliary Switches	D - (2) 16 deck snap action rotary switch
CTs 1-3-5	M - 2 Set 1200/5 C400 TR 2.00 (8.24")
CTs 2-4-6	M - 2 Set 1200/5 C400 TR 2.00 (8.24")
Material Type	Stainless Steel
Enclosure Material	S-SSTL Cab (38kV 1250/2000A)
BCT Shorting Type	Standard shorting type terminal blocks
BCT Wiring	#10 AWG; All taps wired to term block
ED2.0 board	H - 85-264 VAC or 77-280 VDC High Voltage Board (38 kV)
Control Voltage	5 - 125 VDC Operating Voltage
Circuit Protection	K - Fused knife switches provided for control circuits
Bushing Creep	Standard Creep Bushing
Bushing Type	Standard Bushing (38 kV, 1200/1250 Amp, 200 kVBIL)
Bushing Terminal Connectors	4 - 4 Hole NEMA Pad (1200/1250 Amp)
Control Type	B - Basic Unit
Panel Configuration	Z - Special panel
Control Wiring	#14 AWG; Control Wire (Standard)
Control Wiring Lugs	Insulated Lugs (Standard)
Control Terminal Blocks	Standard terminal blocks as required.
Heaters	Special Heater
	Two 100W, 230 VAC continuously operated cabinet heaters
Local/Remote Switch	(1) Standard local/remote switch provided
Test Switches	No test switches provided
Digital Meters	No digital meters provided
Thermostats	(1) Standard thermostat included. Operating Range: 70°F to 80°F
Wire Markers	Brady wire marker sleeves as required.
Control Switch	No Control Switch Provided
Legacy Material	No
Special Final Assembly	Special Final Assembly None
Shipping Special	Special Shipping Requirements No
Seismic Option	None

DYNAMIC ACCESSORIES	
Dynamic Accessories	120 VAC relay cabinet light mounted inside relay control cabinet



	(Qty 1)
Dynamic Accessories	120 VAC, 1 phase GFI utility outlet mounted inside the relay
	control cabinet. (Qty 1)
Dynamic Accessories	Ground Clamps (#4 - 4/0) (Qty 1)
Dynamic Accessories	Device Nameplates (Qty 1)
Dynamic Accessories	External Bushing Identification Stickers (Qty 1)
Dynamic Accessories	Cap discharge switch (Qty 1)

Accessories

ABB Internal Order Entry Information

CID Code: 9AAC30400486 Source Location <u>Code:</u> 9AAE315900

# Item 3 (Standard Line Item)

# ABB Product ID: MB3025DUUSH5KBZ4

Type	R-MAG
Types Rating	MB3025 - 38 kV 2000 Amp 200 kV BIL 31.5 kA
Voltage	38 kV
BIL	200 kV BIL
Current	2000A
Interrupting Current	31.5
Power Frequency	60 Hz
Auxiliary Switches	D - (2) 16 deck snap action rotary switch
CTs 1-3-5	U - 2 Sets 2000/5 C400 TR 2.00(4.76")
CTs 2-4-6	U - 2 Sets 2000/5 C400 TR 2.00(4.76")
Material Type	Stainless Steel
Enclosure Material	S-SSTL Cab (38kV 1250/2000A)
BCT Shorting Type	Standard shorting type terminal blocks
BCT Wiring	#10 AWG; All taps wired to term block
ED2.0 board	H - 85-264 VAC or 77-280 VDC High Voltage Board (38 kV)
Control Voltage	5 - 125 VDC Operating Voltage
Circuit Protection	K - Fused knife switches provided for control circuits
Bushing Creep	Standard Creep Bushing
Bushing Type	Standard Bushing (38 kV, 2000 Amp, 200 kVBIL)
Bushing Terminal Connectors	4 - 4 Hole NEMA Pad (2000 Amp)
Control Type	B - Basic Unit
Panel Configuration	Z - Special panel
	Provide cutout only for Qty. 1 (One) SEL-351S relay 3U and Qty. 2
	(Two) FT style isolation switches
Control Wiring	#14 AWG; Control Wire (Standard)
Control Wiring Lugs	Insulated Lugs (Standard)



Control Terminal Blocks	Standard terminal blocks as required.	
Heaters	Special Heater	
	Two 100W, 230 VAC continuously operated cabinet heaters	
Local/Remote Switch	(1) Standard local/remote switch provided	
Test Switches	No test switches provided	
Digital Meters	No digital meters provided	
Thermostats	(1) Standard thermostat included. Operating Range: 70°F to 80°F	
Wire Markers	Brady wire marker sleeves as required.	
Control Switch	No Control Switch Provided	
Legacy Material	Yes	
	1VA5000742-0001	
Special Final Assembly	Special Final Assembly None	
Shipping Special	Special Shipping Requirements No	
Seismic Option	None	

## DYNAMIC ACCESSORIES

Dynamic Accessories	Cap discharge switch (Qty 1)
Dynamic Accessories	120 VAC, 1 phase GFI utility outlet mounted inside the relay
	control cabinet. (Qty 1)
Dynamic Accessories	External Bushing Identification Stickers (Qty 1)
Dynamic Accessories	Ground Clamps (#4 - 4/0) (Qty 1)
Dynamic Accessories	Device Nameplates (Qty 1)
Dynamic Accessories	120 VAC relay cabinet light mounted inside relay control cabinet
	(Qty 1)

## Accessories

ABB Internal Order Entry Information

CID Code: 9AAC30400486 Source Location <u>Code:</u> 9AAE315900



## Clarifications

ABB provides quotation based on the specifications provided by CITY OF LAKE WORTH BEACH.

## **Revision History**

Rev #	Date	Description of Change	Handled By
2	1/27/2021	Quantity updated to 1 (one), L/R switch added in	IC
		ITEM#1 and ITEM#2	

# Example R-MAG Cost Savings

Operating mechanism maintenance cost savings

	_	Mechanism	
	_	Spring charged <sup>2</sup>	Magnetic actuator
Estimated service life (years) <sup>3</sup>		30	30
Number of ye	umber of years between maintenance		Not applicable
Cost per maintenance event		\$685.00	Not applicable
	Labor cost per hour	\$85	Not applicable
event	Switching time (hrs)	2	Not applicable
L.	# of workers required for switching	2	Not applicable
t be	Time to complete maintenance (hrs)	2	Not applicable
Cost	# of workers required for maintenance	2	Not applicable
-	Material costs	\$5.00	Not applicable
Lifetime maintenance costs		\$10,275.00	\$0.00

Lifetime operating mechanism maintenance cost savings: \$10,275.00

based on the environment, maintenance and usage of the breaker; ABB offers a standard Sugar limited warranty for its R-Mag product line.



<sup>&</sup>lt;sup>3</sup> The values used for the spring charged mechanism breaker referred to in the 'Example R-MAG Cost Savings' are based on ABB's Rbreaker that utilizes a spring charged mechanism. <sup>1</sup> The Estimated Service Life refers to the normally observed useful service life for a product. The estimated service life will vary



## General breaker maintenance costs

		Mechanism	
		Spring charged	Magnetic actuator
Estimated service life (years)		30	30
Number of years between maintenance		5	5
Cost per main	per maintenance event		\$47.50
L	Labor cost per hour	\$85	\$85
cost per event	Time to complete maintenance (hrs)	0.5	0.5
eve eve	# of workers required for maintenance	1	1
-	Material costs	\$5.00	\$5.00
ifetime main	tenance costs	\$285.00	\$285.00

Lifetime general maintenance cost savings: \$0.00

ED2.0 electronic control board cost savings

		Spring mechanism	R-MAG ED2 board
		change-out cost	change-out cost
Estimated service life (years)		30	30
Number of years between replacement		10	10
Cost per replacement event		\$2,780.00	\$1,655.00
¥	Labor cost per hour	\$85.00	\$85.00
event	Time to complete replacement ( <u>ኪር</u> գ)	9	1.5
		(coil and motor)	(ED2 board)
t ber	# of workers required for replacement	2	2
Cost	Material cost	\$1,250.00	\$1,400.00
÷		(coil and motor)	(ED2 board)
Lifetime maintenance costs		\$8,340.00	\$4,965.00

Lifetime change-out cost savings: \$3,375.00



## **Optional Services**

ABB can support its customers with hands-on, factory authorized training for all new installations. This training is intended for up to 10 technicians on-site to train them on the proper operation and safety requirements of their new gear. The duration and content of the class can be customized based on the experience and background of the attending technicians. The classes are led by a highly skilled, factory trained field service technician. Additional training courses are available based on customer need, such as preventive maintenance, complete refurbishment, relay coordination, etc. ABB will design the program around customer requirements.

ABB offers installation and commissioning, utilizing its factory trained service team, for all its products at competitive rates. ABB works with its customers to determine the level of support and installation schedule to fit their specific needs. ABB will waive the fee for a <u>one day</u> hands-on training when the ABB service team is used to support installation.

ABB also offers a preventive maintenance program at factory recommended intervals to increase the reliability and service life of your new gear. Choosing an ABB preventive maintenance program may allow ABB to extend the warranty on your equipment.



## General Terms of Sale

#### Price

Prices are firm for shipment quoted, and do not include federal, state, or local taxes of any kind.

#### Payment

Payment terms are Due in 30 days invoice date. All returns are subject to a restocking fee of no more than 30% of the amount of the order. ABB reserves the right to review and revise quotes based on cost of material fluctuation.

#### **Cancellation Charges**

Cancellation of the contract will be subject to penalties depending on the time the cancellation occurs. ABB's standard cancellation charges are 10% after receipt of order, 20% after drawings issued to customer for approval or if order has been engineered, 45% after release to order major material, 75% after receipt of major material, and 100% after start of fabrication.

#### Change Notices

Changes after order entry related to engineering, drawings, or parts could be subject to additional charges and may impact shipment schedule.

#### Warranty

The equipment is warranted for a period of 60 months from delivery from date of energization, but not to exceed 0 months max.

#### Delivery Terms

Proposed delivery terms will be Carriage Paid To.

#### Extra Information:USA DEST.

Quoted lead times are based on current production levels. Actual lead times are dependent on available production space at time of order entry and/or release to manufacturing.

Please add 3 weeks for drawing approvals, if required. To ensure the quoted lead-time please return approval drawings to ABB within 2 weeks of receipt. ABB will make every effort to maintain a short delivery schedule.





#### Approval Drawings

Approval drawings, if requested or required, will be supplied within 4 weeks ARO. Manufacturing lead time is based upon timely return of approval drawings from customer within two (2) weeks of receipt of drawings. On orders requiring "hold for release to manufacturing until receipt of approval drawings", the quoted lead time commences on the date ABB receives the approved drawings.

## Shipment Schedule

Contract drawings, information submittals, manufacturing, and shipment schedules will follow the outline below and is contingent on customer approval in the time frame indicated:

- I. Orders with Drawing Approval
  - Approval Drawings 3 weeks after receipt of ABB approved order
  - Customer drawing approval time 2 weeks to keep order timeline on schedule
  - Product ready for shipment 15 weeks after return of all approval drawings with customer release for manufacture
  - Delivery 1-2 weeks
  - Total lead time: 20-21 weeks
- Orders with existing bill of material, no bill of material changes and no approval drawings (duplicate orders)
  - Manufacturing time 15 weeks after receipt of ABB approved order
  - Delivery 1-2 weeks
  - Total lead time: 16-17 weeks

All customer provided data and requirement must be finalized at the time of purchase order placement. Revision to contract requirements may result in schedule changes and delays. All lead-times are subject to change based on prior sales and loaded factory capacity, please contact factory for actual lead-times at time of order placement.