ZELLER
Automation, Control & Energy
A Division of Kaman

Zeller Automation, Control & Energy
1000 University Ave
Suite 800
Rochester, NY 14607

P 585.254.8840
www.zellercorp.com

Zeller AC&E Budgetary Proposal #160828-0 March 21, 2016

To: Mr. Viniamin Tokarchuk
Rochester Institute of Technology

E-mail: vt4133@rit.edu

Subject: RIT – Glass Fab Senior Project – Control Panel

Mr. Tokarchuk:

We are submitting the following Zeller AC&E Budgetary Proposal #160828-0 for the RIT – Glass Fab Senior Project – Control Panel. It is understood that the control panel will be installed on or near the machine and will be indoors. We recommend that an engineering design review meeting be conducted with the customer to clearly define deliverables, design requirements and any changes, machine or system, since this proposal was drafted. This proposal is limited to the items listed below and is developed based our meeting and supporting information furnished by you.

Work Scope

Engineering Submittal will be provided covering the following:

1. Glass Fab Control Panel
    a. NEMA 12/4 Painted Enclosure (Approx. 48”H x 36”W x 12”D)
        i. Power Feed is 460Vac, 3-Phase.
        ii. Qty. 1- Main Circuit breaker w/ lockable Disconnect Handle
        iii. Power Distribution Block
        iv. Main Ground Lug
        v. Qty. 1 – 480V/120V, 1500VA Control Transformer
        vi. Qty. 1- 24Vdc, 10Amp Power Supply
        vii. Qty. 1- Safety Relay
        viii. Ancillary components to provide a functional control panel. IE. Terminal blocks, Fuses, Fuse Holders, Wire Duct, etc.
        ix. Control panel will be fabricated to U508A standards and UL listed.
2. Customer Supplied Material – Installation into Control Panel
    a. Qty. 1 - 2094-BC02-M02-M; Power Module, Integrated, 460V, 15kW Conv. 15A Inv., Kinetix 6500 EtherNet/IP Safe Torque-Off Control Module
    b. Qty. 4 - 2094-EN02D-M01-S0; EtherNet/IP Safe Torque-Off Control Module
    c. Qty. 1 - 2094-PRS8; Power Rail, Slim, 230V OR 460V, 8 Axis
    d. Qty. 4 - 2094-PRF; Power rail filler
    e. Qty. 3 - 2094-BM02-M; Power Module, Axis, 460V, 15A Inv., Kinetix 6500 EtherNet/IP Safe Torque-Off Control Module

f. Qty. 4 - 2090-K6CK-D15M; Connector, Motor Feedback, D-Shell/Term Block, 15 Pin.
g. Qty. 4 - 2090-K6CK-D44M; Connector Kit, 44 pin, K6200/K6500 I/O, Auxiliary feedback, and safety
h. Qty. 3 - 1585J-M8CBJM-0M3; 0.3 meter shielded Ethernet cable
i. Qty. 1- 1585J-M8CBJM-5; 5 meter shielded Ethernet cable
j. Qty. 1- 1769-L36ERM; CompactLogix L3 controller, Dual Ethernet w/DLR capability, 3MB memory
k. Qty. 1- 1769-PB4; Power Supply 24VDC Input 4A @ 5VDC 2A @ 24VDC
l. Qty. 1- 1769-ECR; Right end cap

3. Engineering Submittal Format
    a. All control system drawings and BOM shall be submitted for review and approval prior to procurement of materials and start of manufacturing.
    b. Manufacturers cut sheets will be provided for the material being provided with red box identification or specific component model numbers and certifications (i.e. UL listing, etc.), where applicable.
4. Enclosure Manufacturing
    a. Procure materials, assemble, tag and wire per customers drawings.
        i. Manufacturing to take place in our Rochester, NY manufacturing facility
        ii. Engraved Lamacoid tags for exterior enclosure components
        iii. Brady adhesive for device labels
        iv. Wire Labeling shall be printed adhesive Type
        v. MTW rated control wiring
        vi. Standard wire end terminations (no ferrules or other end preparation)
        vii. UL labeling as required
5. Factory Acceptance Testing of Enclosures
    a. Point-To-Point continuity testing of all connections will be performed prior to power-up testing procedures.
    b. Power-Up Testing will consist of power and control voltage level verification for all devices.
6. Start Up and Training
    a. Completed by RIT
7. Final Documents
    a. As-Build Drawings will be issued with the shipped control panel.

Exceptions and Clarifications

1. Programming is not included and is completed by others.
2. Installation the Control Panels and any Field devises is by others.
3. With the lack of information on Slurry controls and overall interconnections this proposal is subject to change depending on what ends up being required for that part of the cabinet
4. Safety controls and requirements are to be approved by the customer prior to release of material
5. Supply and installation of miscellaneous mounting hardware, brackets and supports is by others.

6. In the event that the Control Panels and Instruments are not immediately installed, it is understood that they will be safely stored in a clean, dry and temperature controlled facility.
7. Interconnecting conduit, junction boxes, wire and other miscellaneous wiring materials are to be supplied by others.

Pricing Summary:

- Schedule of Values (SOV)

Item	Description	Qty.	Price Ea.	Ext. Price
1	Control Panel Design and Manufacturing	1	$15,850.00	$15,850.00
			TOTAL	**$15,850.00**

Terms & Conditions

- Shipping: FOB KIT Zeller AC&E, Rochester, NY 14607
- Freight: Pre-Pay and add
- Invoicing: Net. 30 days
  - Invoicing to follow an agreed Schedule of Values determined at time of Purchase Order
- Delivery:
  - 3-4 weeks for engineering submittals
  - 5-6 weeks for Control Panels after approved submittals
- Purchase order acceptance is expressly based upon Zeller AC&E. standard terms and conditions
- Cancellation Policy:
  - Please note that the products and services listed in this proposal are custom, made to order items, and cannot be returned. In the event this order is cancelled or modified for any reason, the Contractor is obligated for cost and expenses incurred by Zeller AC&E as a result of the cancellation, modification, returns, progress being stopped or other changes from proposed quantities and conditions specified herein.
- Warranty:
  - Zeller AC&E guarantees all workmanship for a period of 12 months from date of shipment. Component Warranties are limited to that provided by the manufacturers—component warranties will be transferred to the owner.
- Proposal is Valid for: 30 days

Please let me know of any questions or need for additional information.

Best regards,

Curt McEntee

Curt McEntee