

TS Series

TS... Touchscreen Kits

for use with LMV3, LMV5 and RWF... Controls



Touchscreen

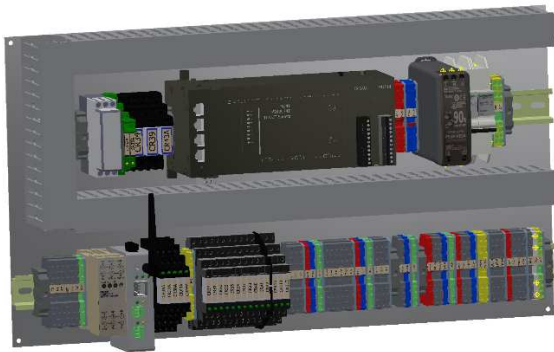


Plate Kit



Enclosure

Description

TS... series touchscreen kits provide a human machine interface (HMI) with a Siemens LMV3 or LMV5 linkageless control. Each kit provides data collection and trending for a hot water or steam boiler. An optional RWF55 control for load or water level modulation easily interfaces with TS... series touchscreen kit.

Each TS... touchscreen kit includes a 3", 6", 10", 12" or 15" touchscreen along with a plate kit. The touchscreen and plate kit can be pre-mounted in an enclosure, or mounted by others in a control panel.

A PLC first-out annunciator provides additional analog, digital, temperature, and/or draft controls inputs and outputs.

Flexible communication interface options to the building management system (BMS) provide streamlined data collection, monitoring and control.

Standard Features

- Local touchscreen interface with Siemens LMV/RWF controllers
- Schneider touchscreens available in 3", 6", 10", 12" or 15"
- Field configurable graphics and tags
- Complete lockout and error history in plain text.
- Fuel-air ratio control curve displayed
- Alarm history stored for most recent 100 faults/alarms
- Detailed annunciation of LMV... digital inputs and outputs
- Remote setpoint, firing rate and/or enable of the LMV... or RWF... via BMS
- Water level control option and status via RWF55, or PLC
- Single or three elements drum level control
- Circulating pump VFD control hot water boilers
- Metric or Standard units displayed
- English, Spanish, and Portuguese languages
- English, Spanish, and Portuguese text for alarms
- Circulating pump/isolation valve control outputs for hydronic boilers (option with expanded annunciator)
- Expanded annunciator options include:
 - Four analog inputs with field configurable label, span and type (0-10V, 2-10V, 0-20mA or 4-20mA), low and high alarm setpoints, with auto or manual reset. Totalization available per minute or per hour.
 - Two analog outputs with field configurable span and type (0-10V, 2-10V, 0- 20mA or 4-20mA); low and high alarm setpoints, with auto or manual reset. Totalization available per minute or per hour.
 - Two dedicated analog outputs for either circulating pump VFD control, or water level control, with field configurable span (4-20mA); low and high alarm setpoints, with auto or manual reset.
 - Twelve universal inputs to be field configured for either 1000 or 100 ohm RTD, or thermocouples type K, or J, analog inputs 4-20mA, with field configurable label, low and high alarm setpoints, with auto or manual reset.
 - Two digital outputs with field configurable logic, including on and off delays. Manual or automatic reset.
 - First-out annunciation option, including fourteen 120 VAC inputs with field labeling capability
 - Eight data logging variables stored

- Four selectable variables for trending up to seven days
- Economizer temperature monitoring
- Draft control
- Connection of two additional RWF55 controllers
- Variable Speed Drive information and setup when preprogrammed VFD (Yaskawa) provided by SCC Inc.
- Variable speed Drive information and setup when preprogrammed VFD (ABB, AB Power Flex, or Danfoss), when provided by others.
- Screen saver with PV, setpoint, demand and status
- Standard Modbus TCP/IP to BMS communications
 - Additional BMS communication options available
- Email communications and text messaging for up to six recipients including alarms, faults and screen shots (screen shot viewer via USB)
- Remote monitoring via smart phone or tablet
- Compatible with SCC Master Panel Lead Lag system

Application

TS... touchscreen kits are suited for hydronic boiler, steam boiler, and other applications utilizing an LMV3 or LMV5 linkageless control system.

Components

All TS... touchscreen kits include the following components:

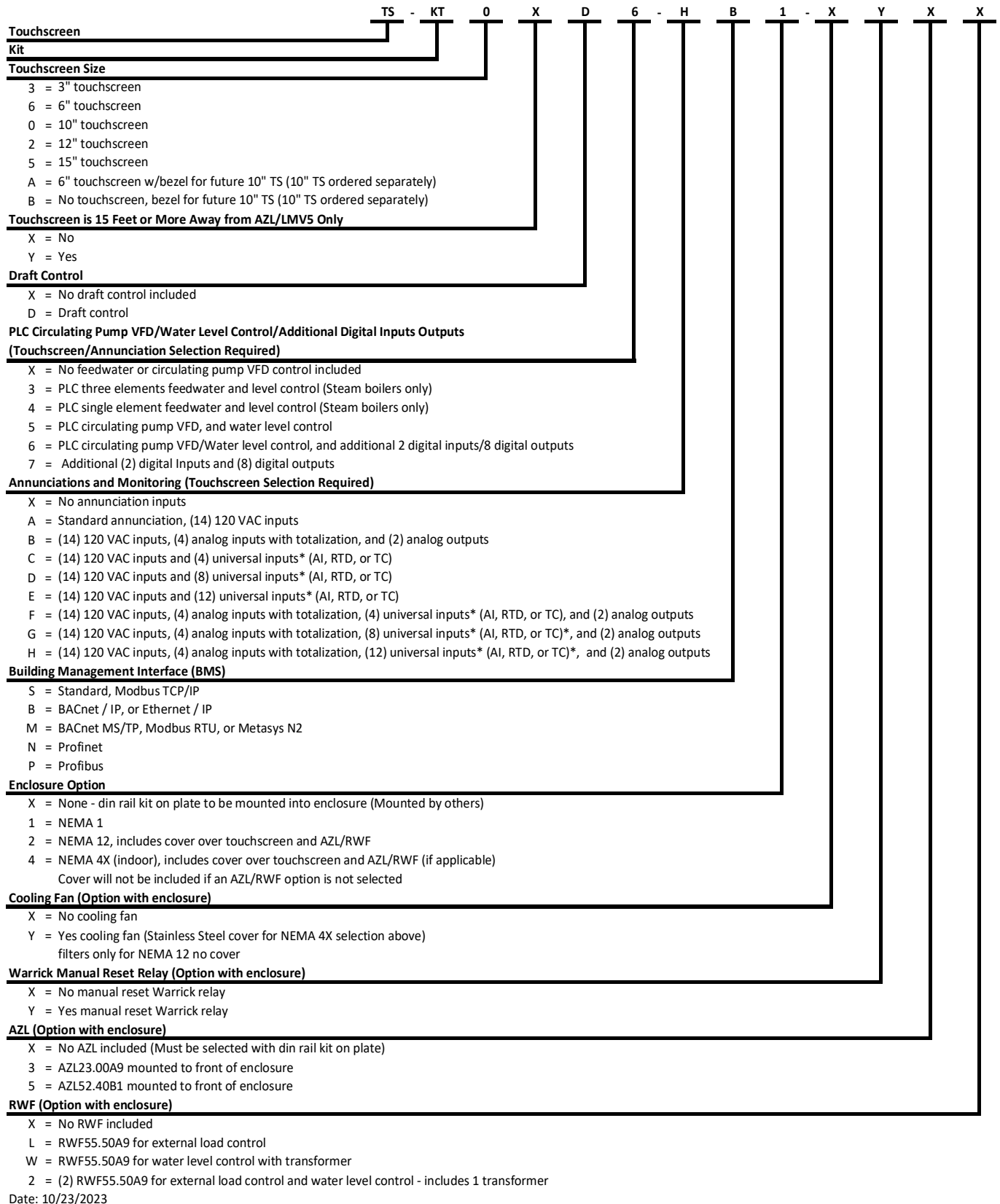
- 3", 6", 10", 12", or 15" touchscreen
- Plate kit including power supply and branch circuit protection
- Cables for quick connections between the plate kit, touchscreen, and LMV... system
- Interconnect terminals for field wiring

The following optional features are available:

- Draft Control
- Annunciation Options Including:
 - 14/16 digital 120 VAC alarm annunciation inputs.
 - 4 analog inputs (0-20mA - 4-20mA - 0-10V - or 2-10V)
 - 2 analog outputs (0-20mA - 4-20mA - 0-10V - or 2-10V)
 - UP to 12 universal inputs field configured for (4-20ma, RTD1000- RTD100 Ohms, Thermocouple Type K, Thermocouple type J, for general purpose
 - 2 analog outputs for circulating pump VFD control, and or steam boilers water level control

- 4 output relays for:
 - Starting circulating pump on Hot water boilers
 - Monitoring a digital value (2 outputs)
 - Annunciation alarms
 - PLC normal operation indication
- Additional 8 output relays
- BMS communication other than standard Modbus
- Open plate kit, or in enclosure

Product Part Numbers



Date: 10/23/2023

***Universal inputs:**

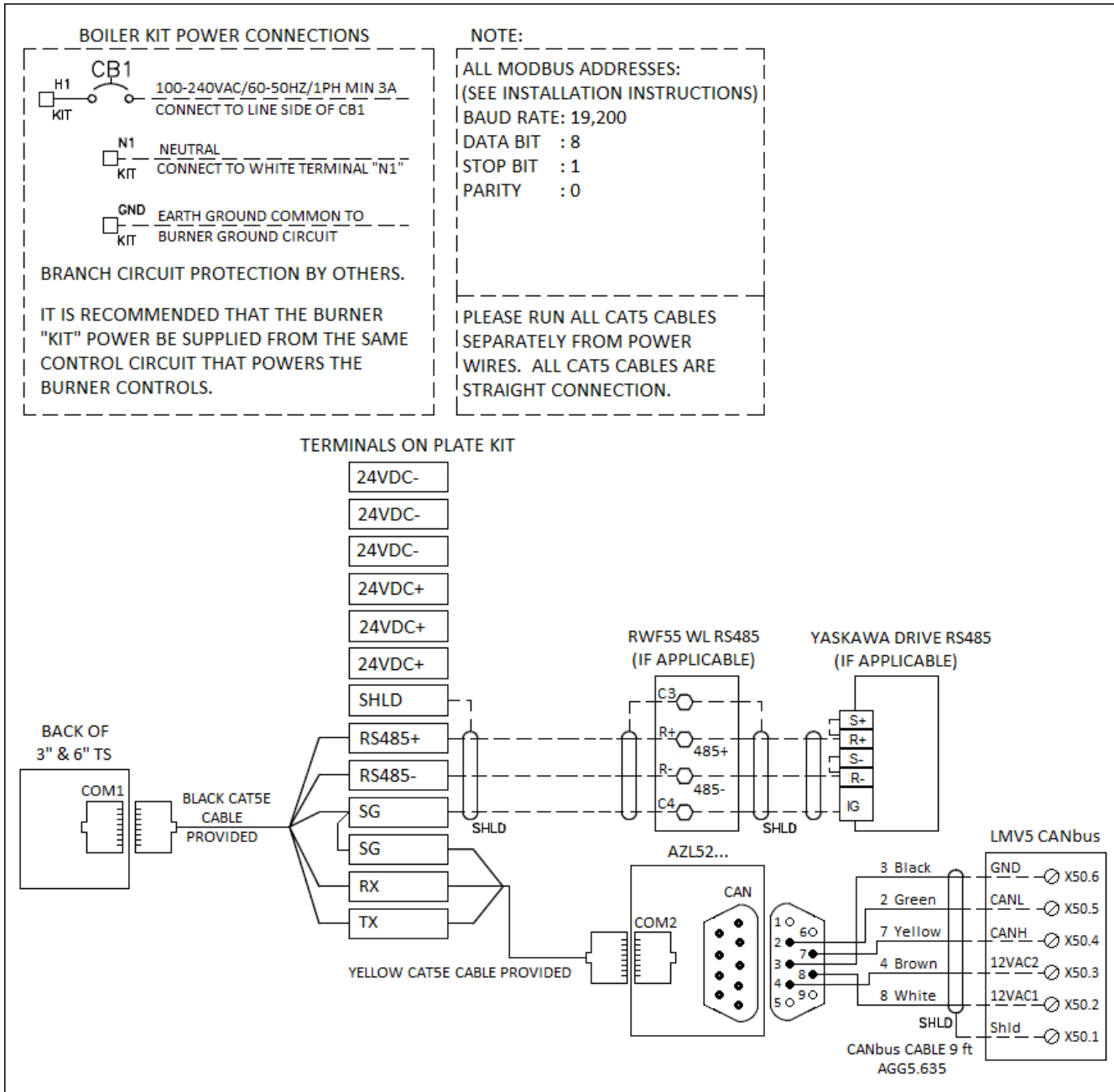
There are four universal inputs per input module. Each module must be configured for the same input, either 4-20 mA, Thermocouple type K or J, or RTD 1000 or 100 ohms. If the maximum of three universal modules are included, the first and second modules may each be configured for a different input type, and the third module will automatically be the same as the second universal module.

Specifications

		3"/6" TS	10" TS	12" TS	15" TS
Physical Characteristic	Main power	110-240 VAC	110-240 VAC	110-240 VAC	110-240 VAC
	Frequency	60-50 Hz	60-50 Hz	60-50 Hz	60-50 Hz
	Touchscreen Power	24 VDC	24 VDC	24 VDC	24 VDC
	Power Consumption	≤ 205 W	≤ 205 W	≤ 205 W	≤ 205 W
	Power Consumption With PLC Annunciation	≤ 460 W	≤ 460 W	≤ 460 W	≤ 460 W
	Dry Contacts	2 Amps	2 Amps	2 Amps	2 Amps
Operating Environment	Operating Temperature	32 to 122 °F [0 to 50 °C]	32 to 131 °F [0 to 55 °C]	32 to 131 °F [0 to 55 °C]	32 to 131 °F [0 to 55 °C]
	Humidity	Max. 80%, No condensation	Max. 85%, No condensation	Max. 85%, No condensation	Max. 85%, No condensation
	NEMA Rating (Indoor)	NEMA 4X	NEMA 4X	NEMA 4X	NEMA 4X

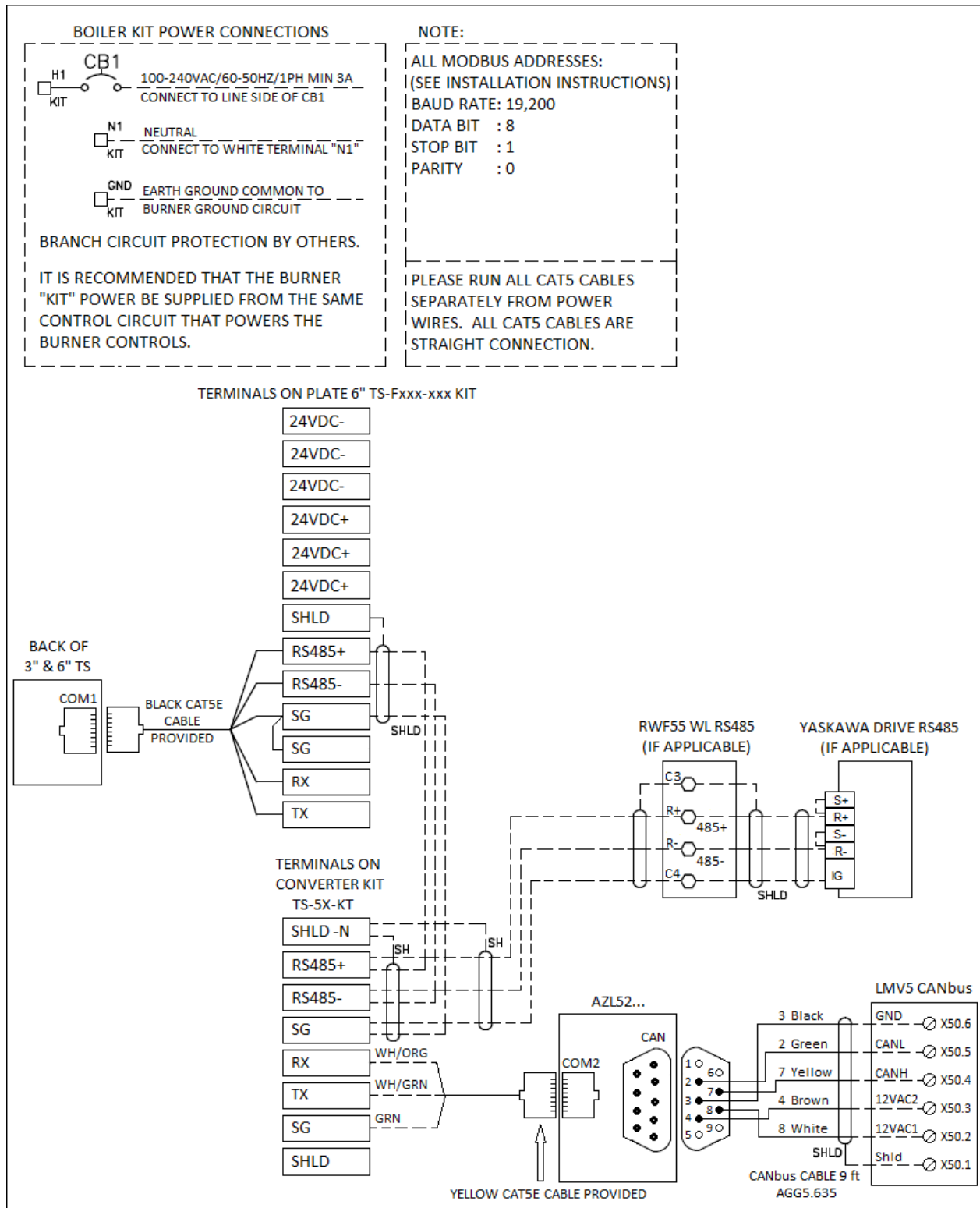
Connections

3" and 6" Touchscreen kit with LMV5 and optional RWF55 for water level control:



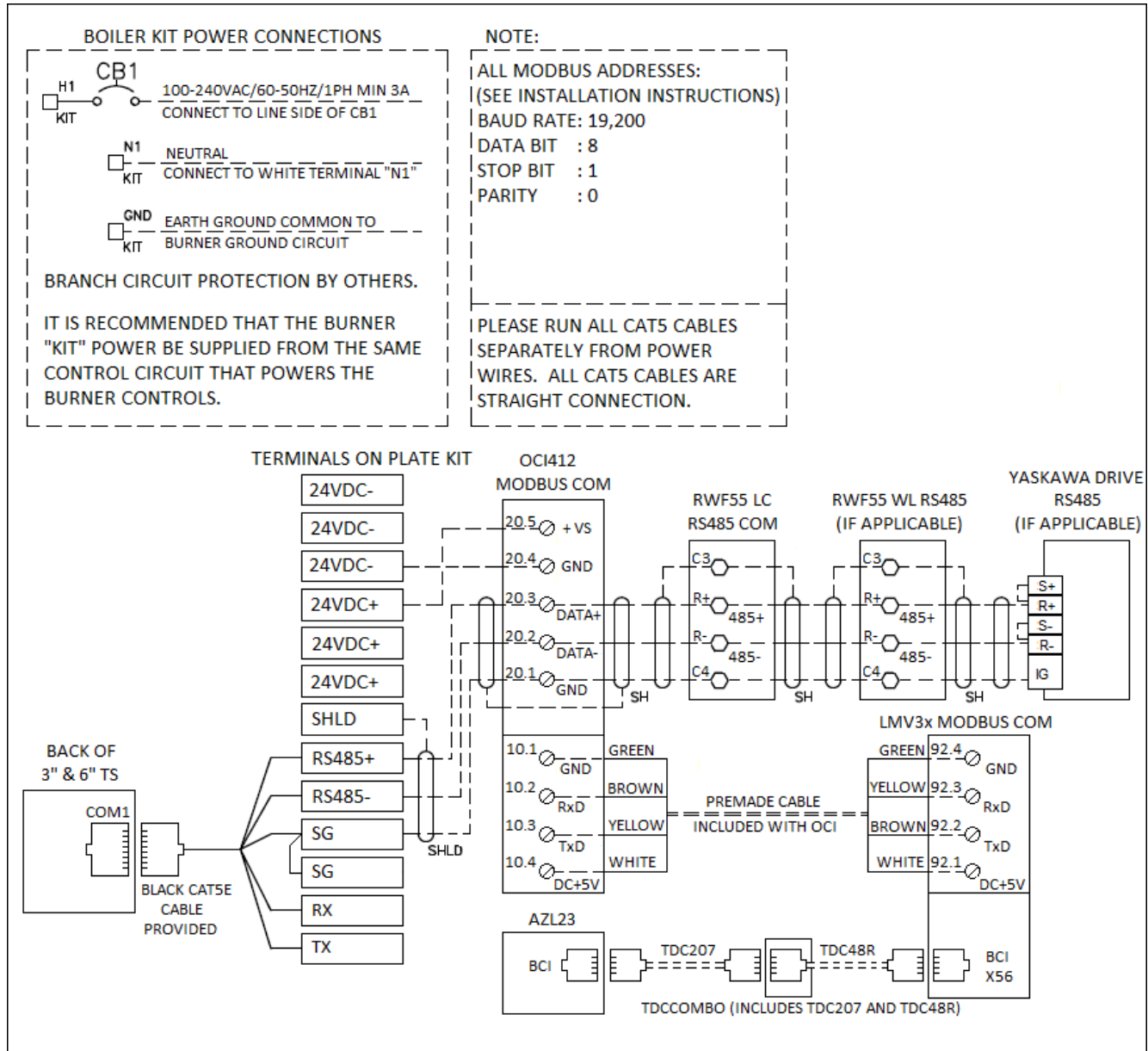
Connections (continued)

3" and 6" Touchscreen kit with LMV5 and optional RWF55 water level control: This diagram is to be used when the touchscreen is mounted more than 15ft away from the AZL



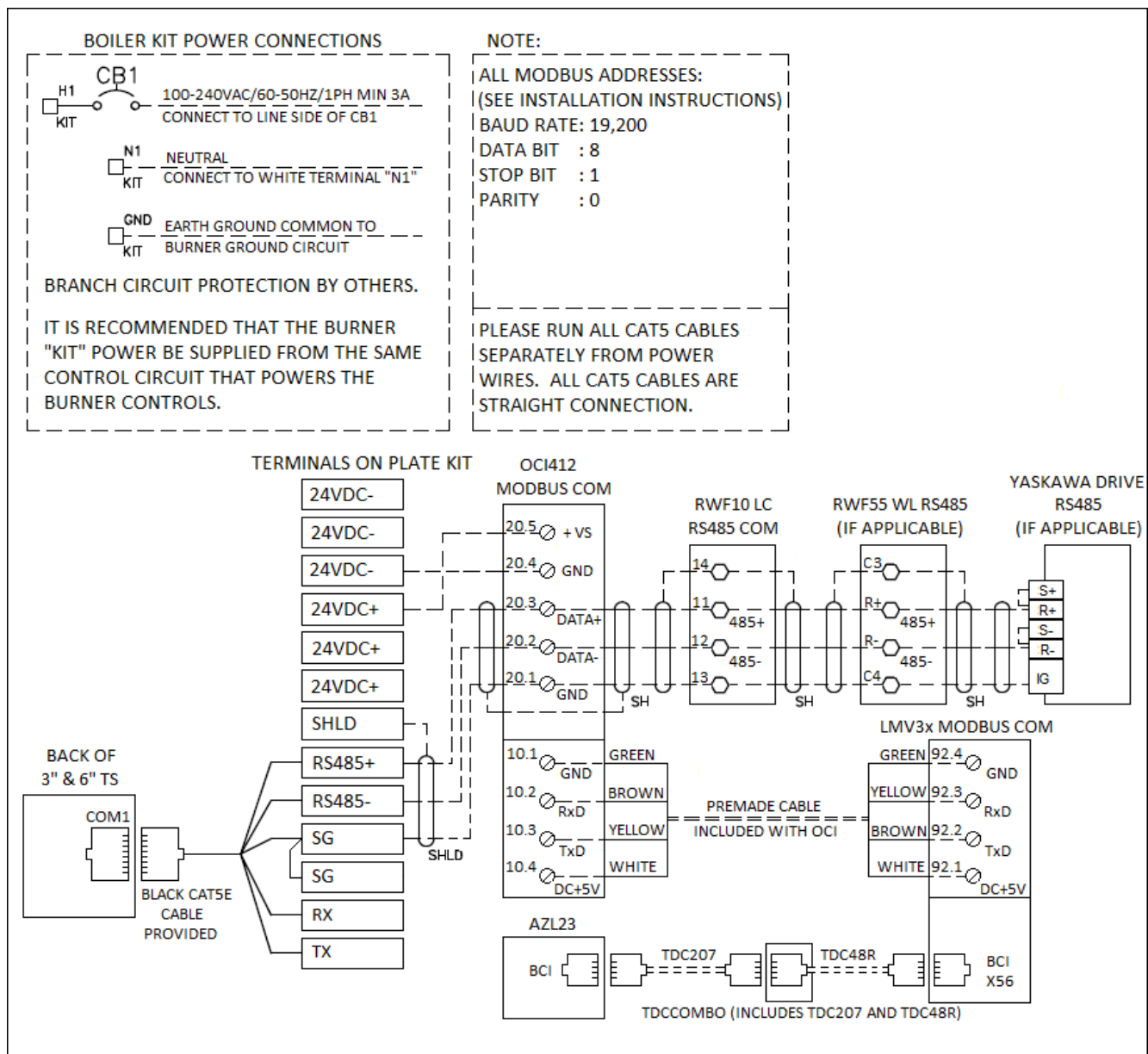
Connections (continued)

3" and 6" Touchscreen kit with LMV3, RWF55 for load control, and optional RWF55 for water level control:



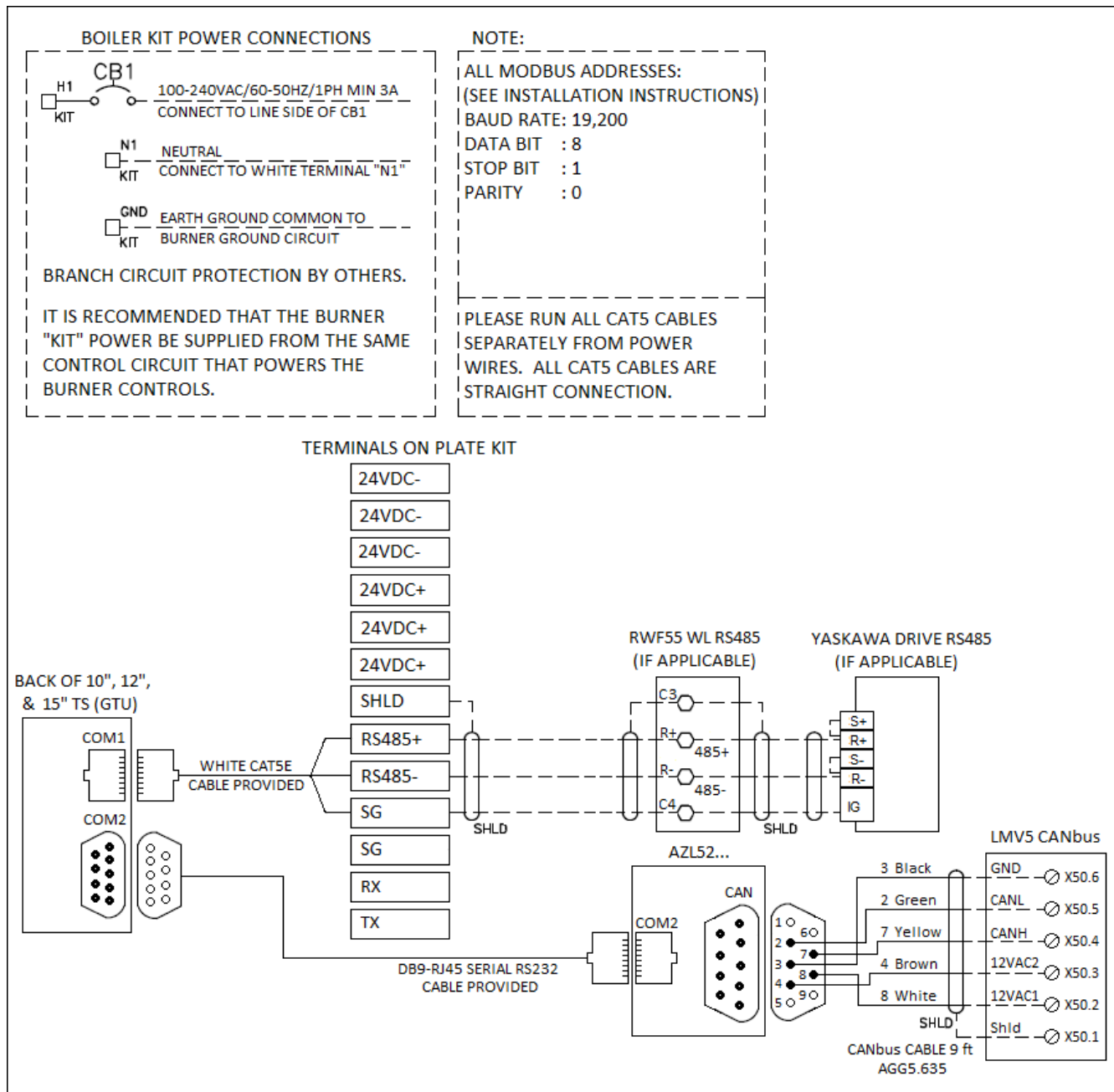
Connections (continued)

3" and 6" Touchscreen kit with LMV3, RWF10 for load control, and optional RWF55 for water level control:



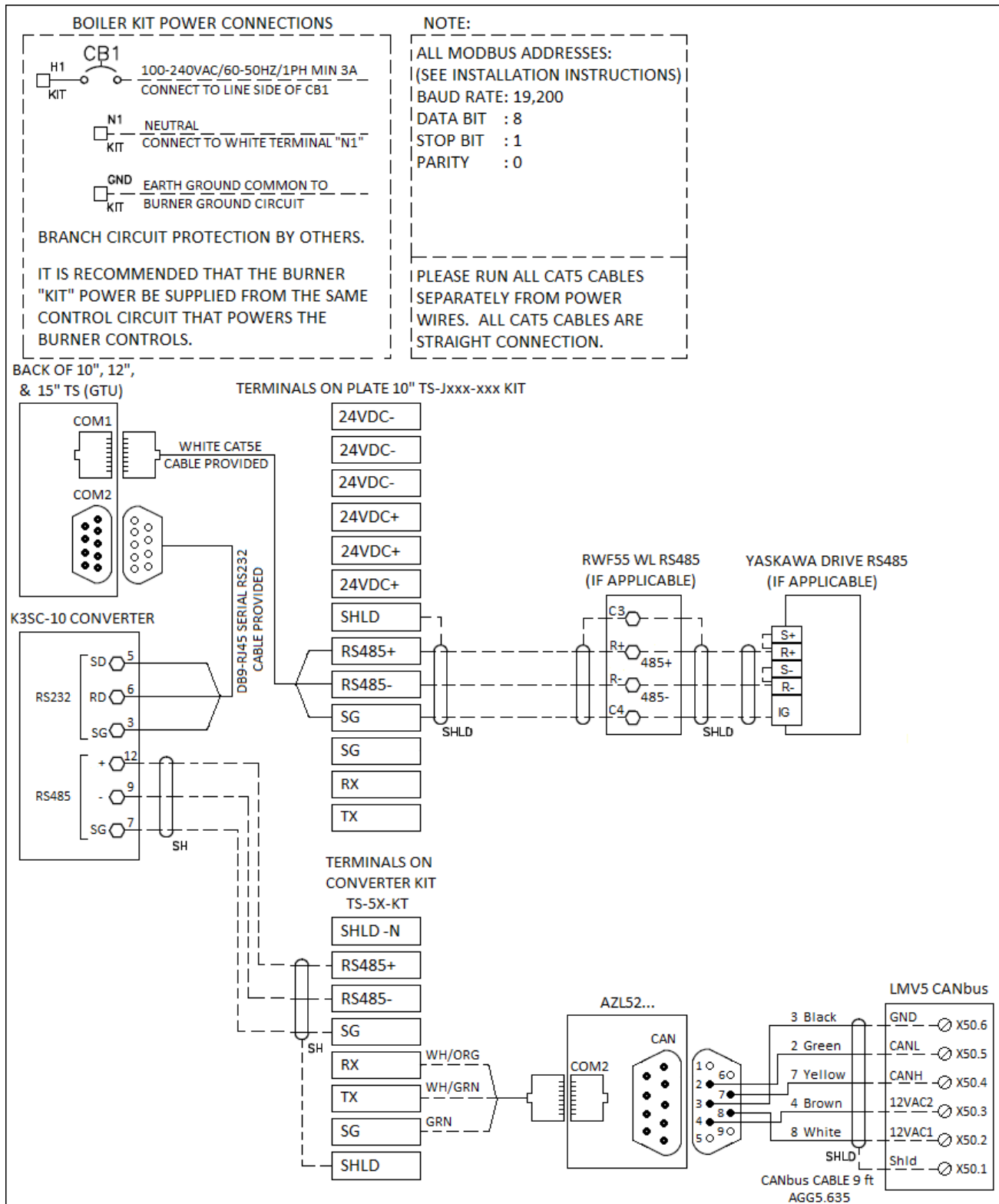
Connections (continued)

10" Touchscreen kit with LMV5 and optional RWF55 for water level control:



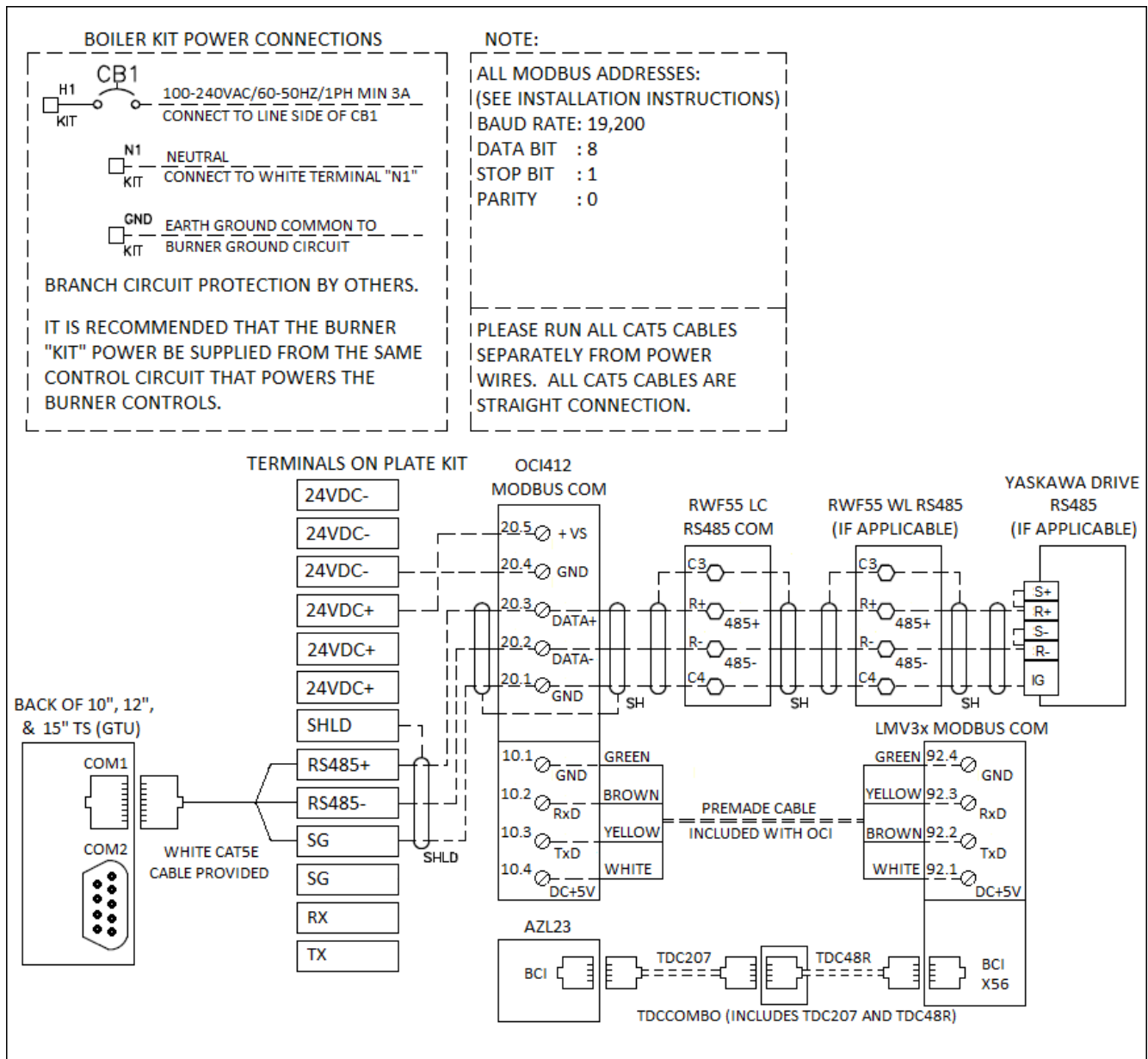
Connections (continued)

10" Touchscreen kit with LMV5 and optional RWF55 for water level control: This diagram is to be used when the touchscreen is mounted more than 15ft away from the AZL



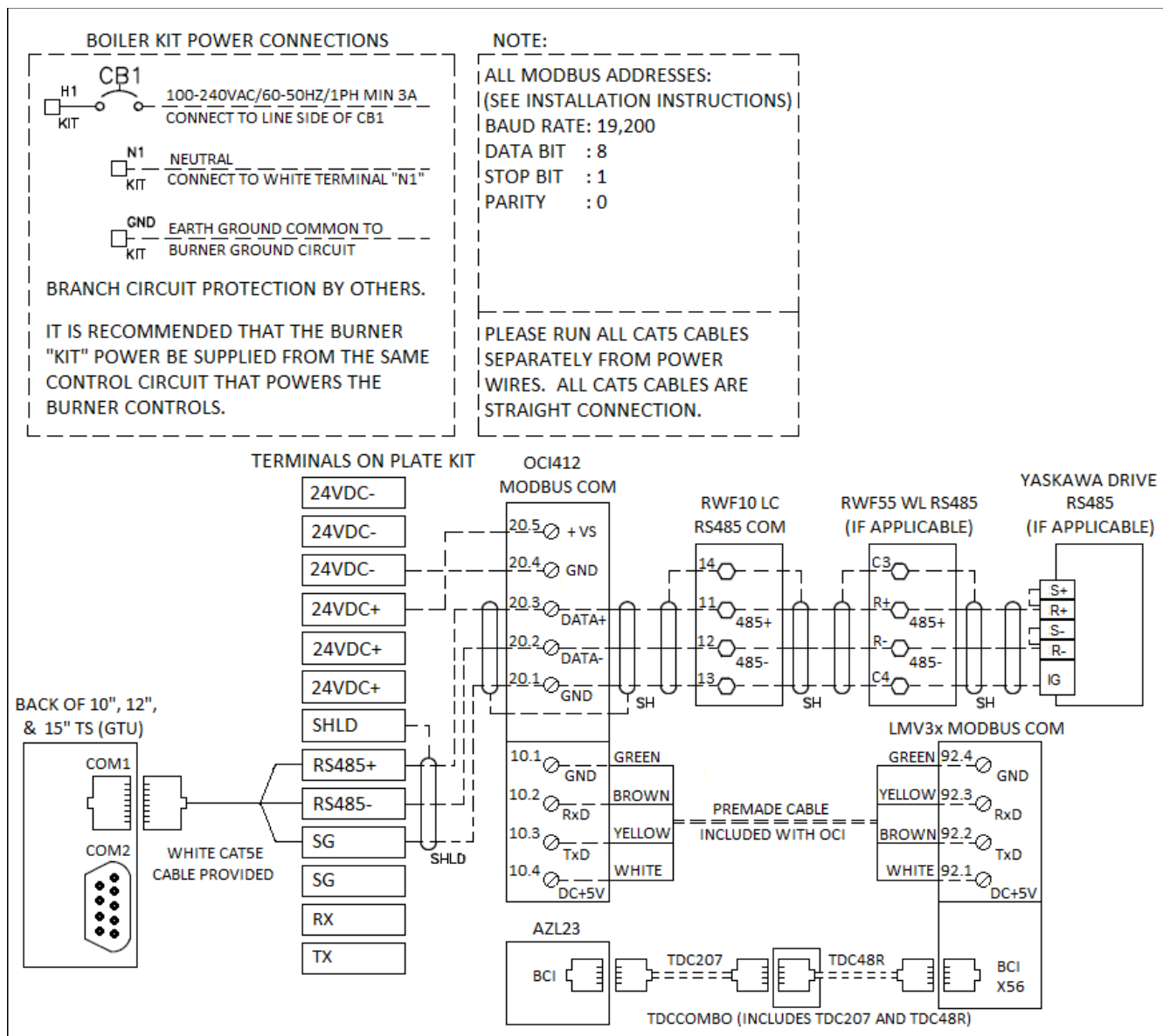
Connections (continued)

10" Touchscreen kit with LMV3, RWF55 for load control, and optional RWF55 for water level control:

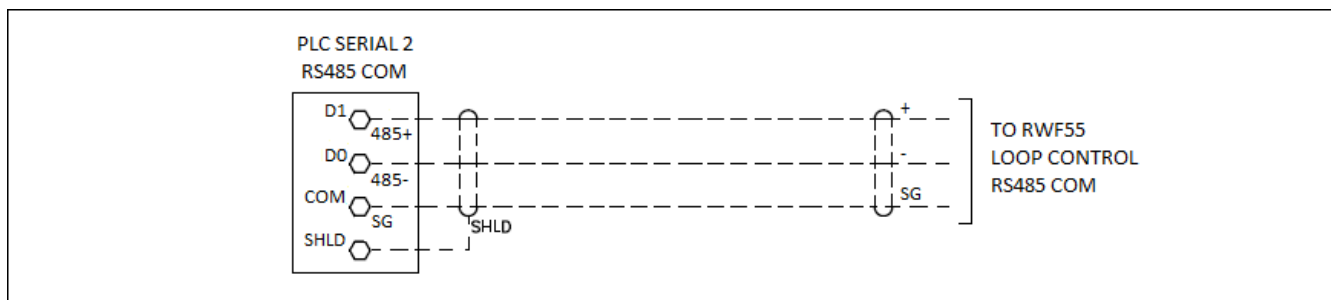


Connections (continued)

10" Touchscreen kit with LMV3, RWF10 for load control, and optional RWF55 for water level control:

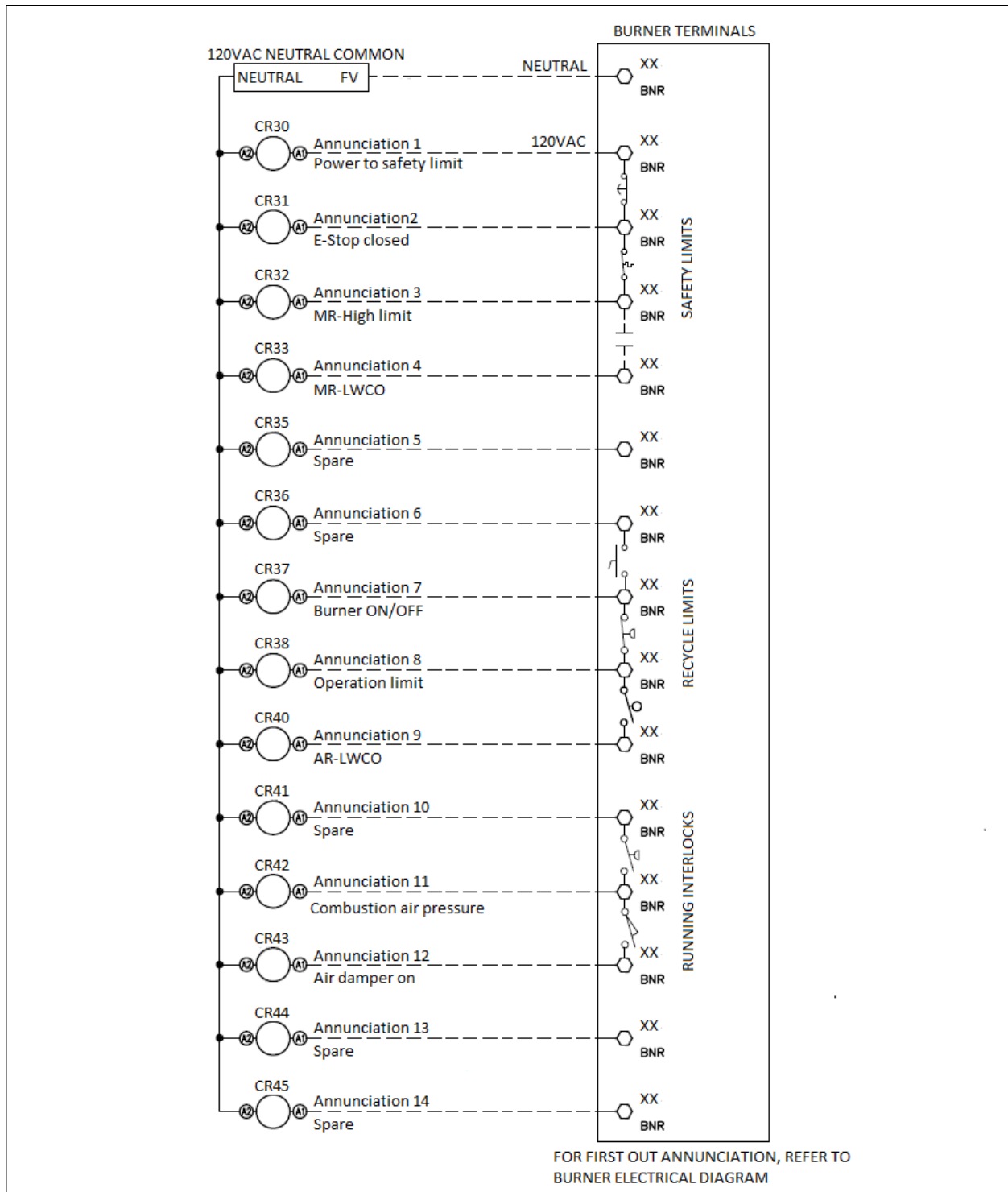


RS485 connection for additional RWF55 for loop control (If applicable)



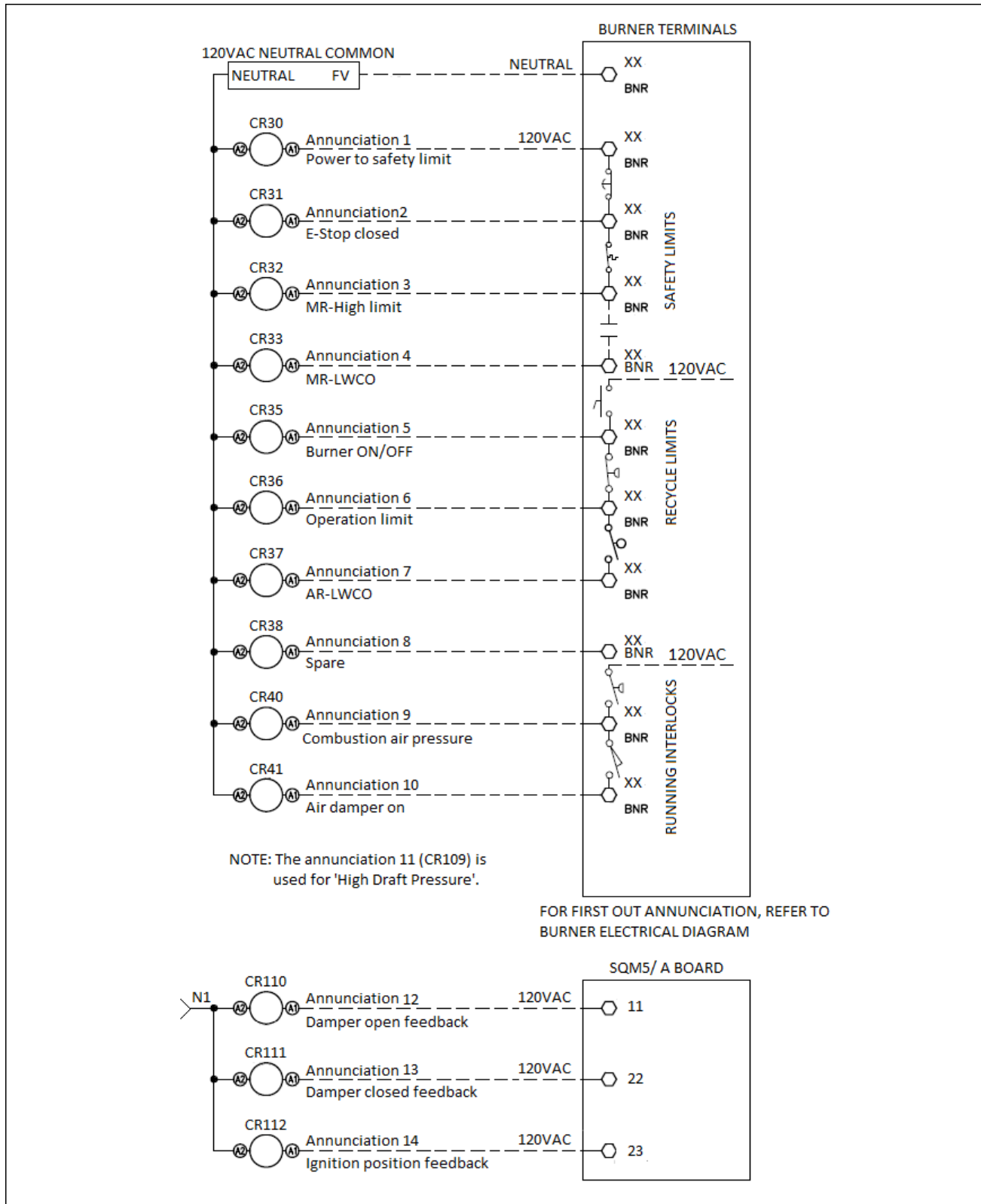
Connections (continued)

Standard annunciation fourteen (14) 120VAC inputs:



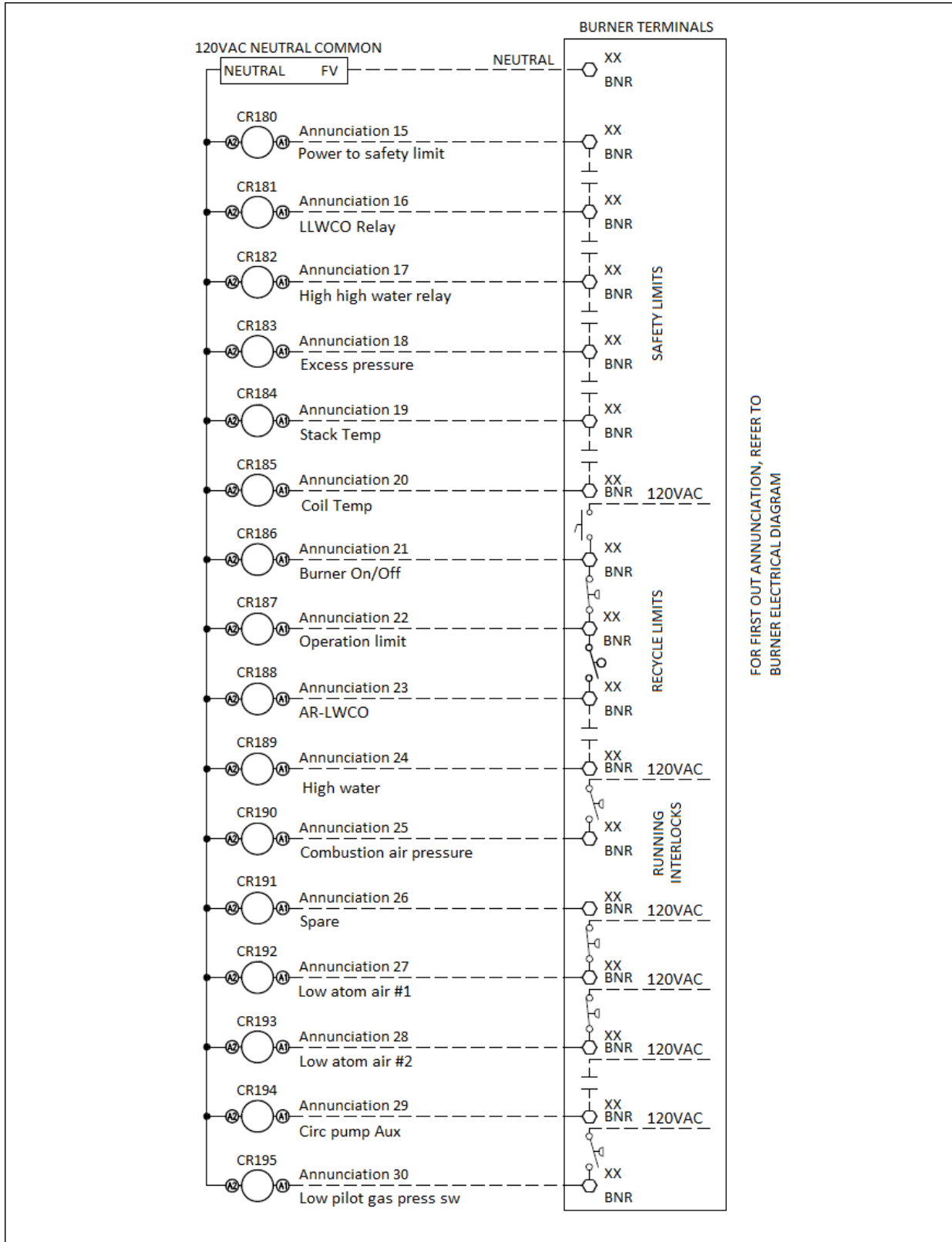
Connections (continued)

Standard annunciation fourteen (14) 120VAC inputs with draft control:



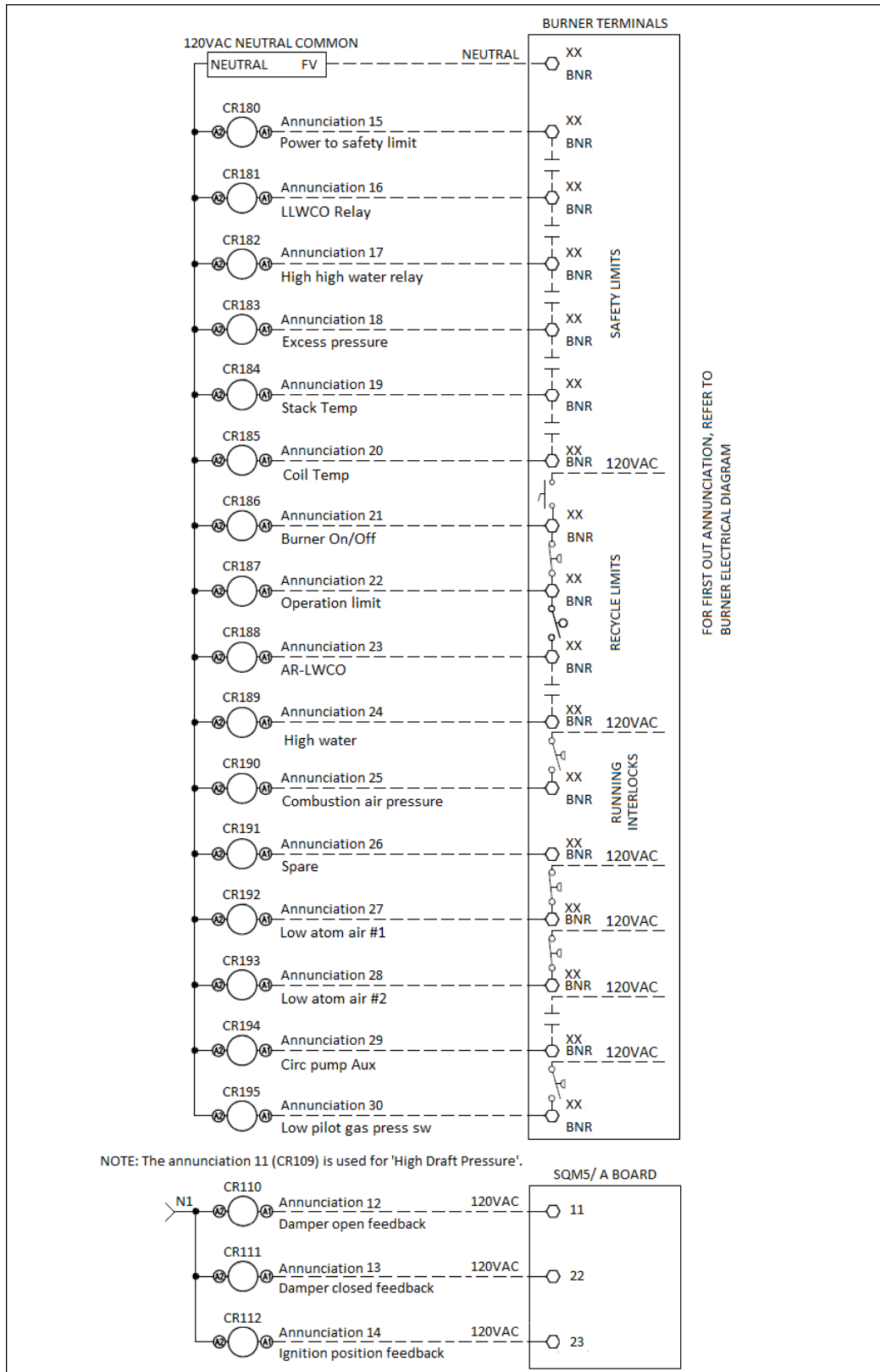
Connections (continued)

Standard annunciation sixteen (16) 120VAC inputs:



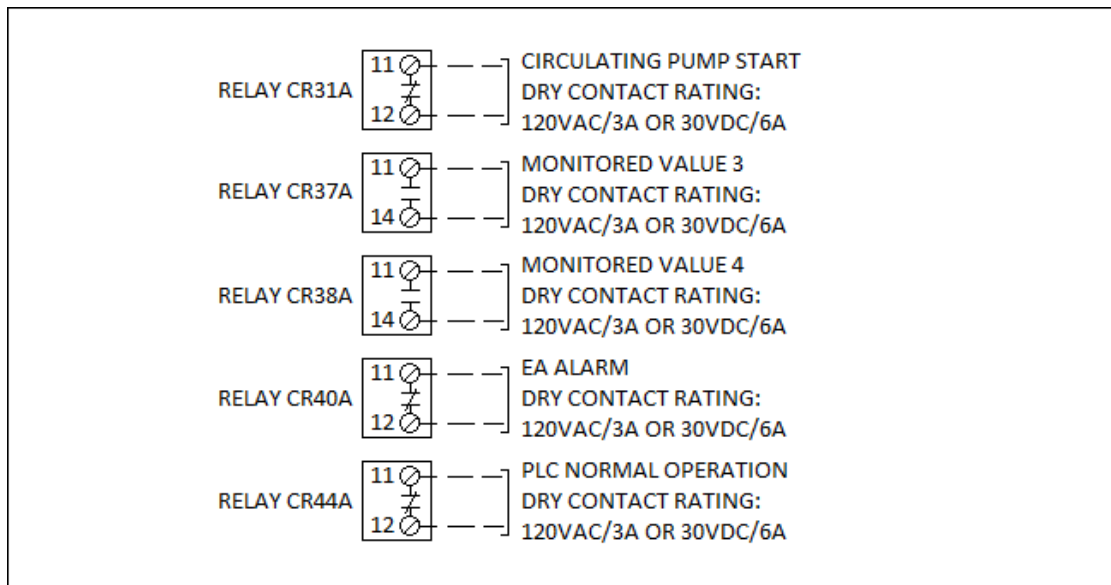
Connections (continued)

Standard annunciation sixteen(16) 120VAC inputs with additional three (4) inputs for draft control:

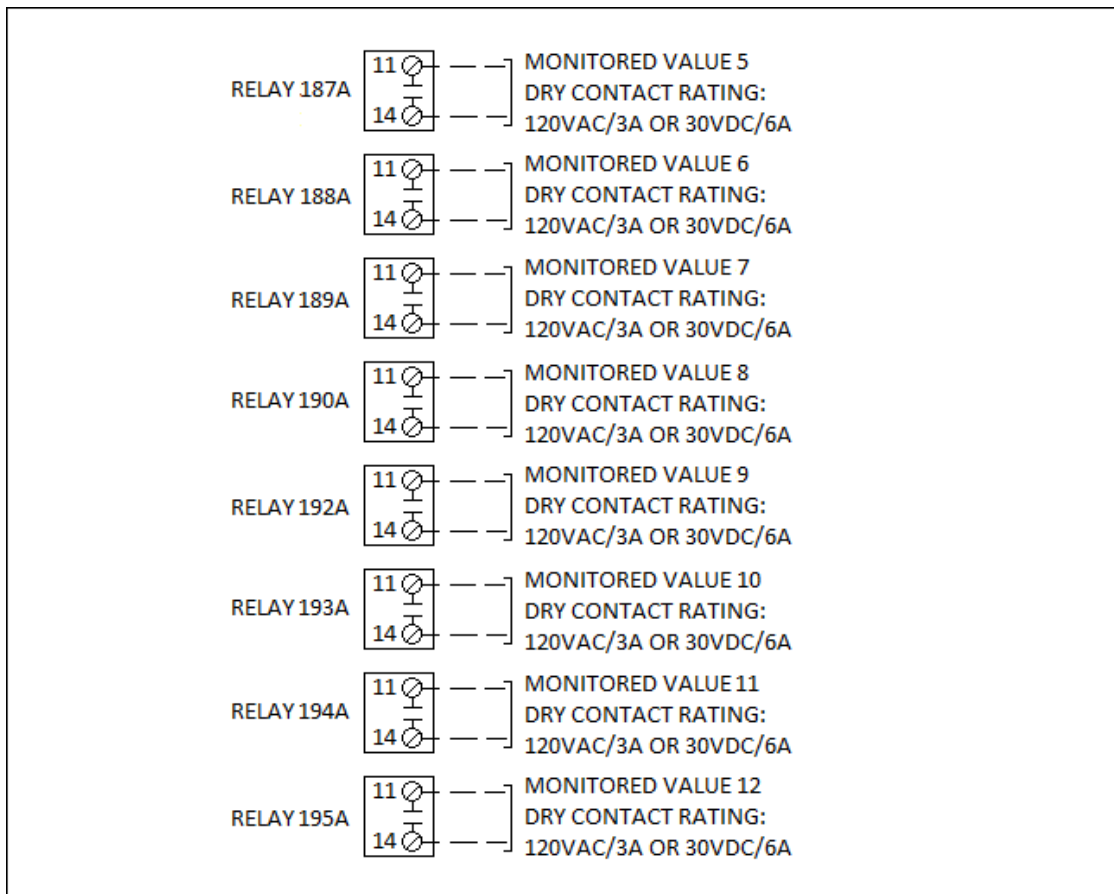


Connections (continued)

Outputs relay terminals:

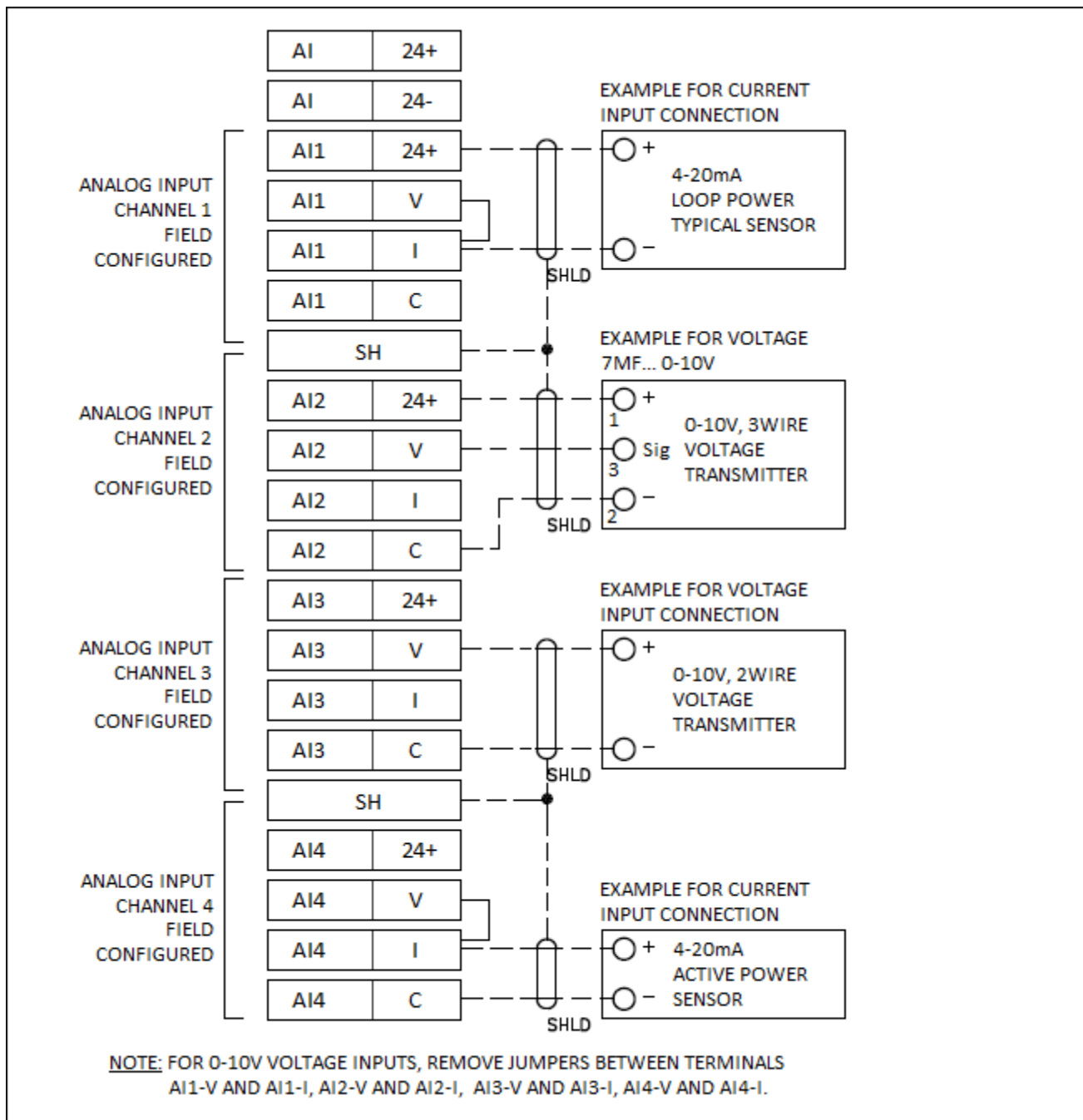


Additional outputs relay terminals:



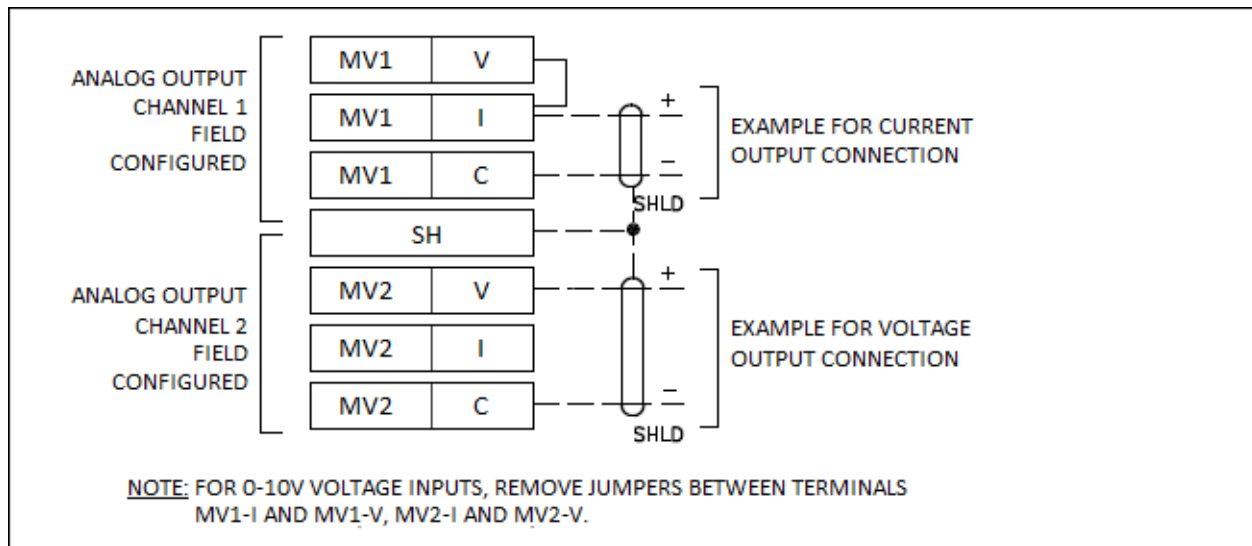
Connections (continued)

Analog input terminals:

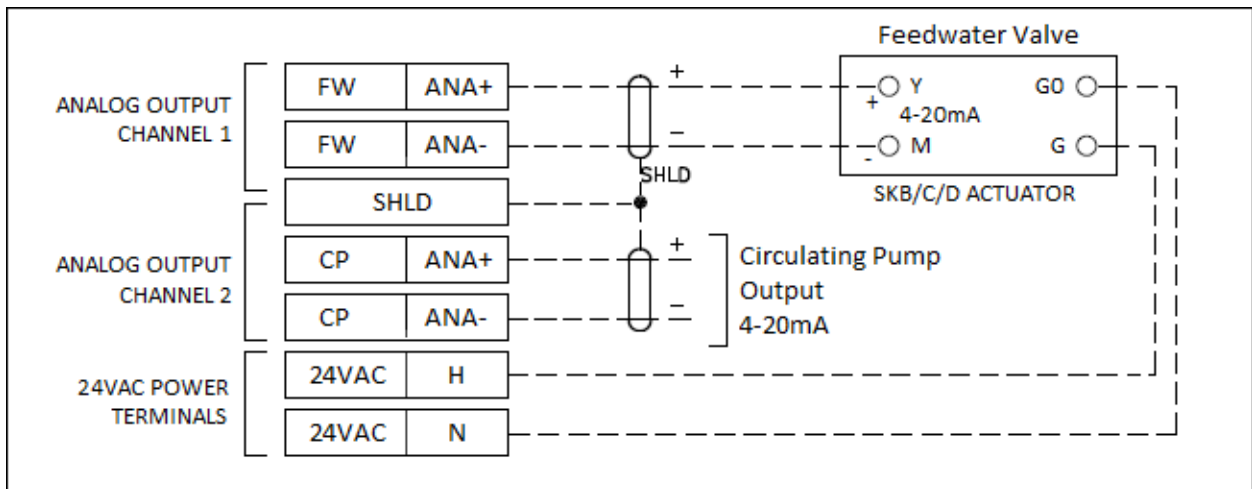


Connections (continued)

Analog output terminals:



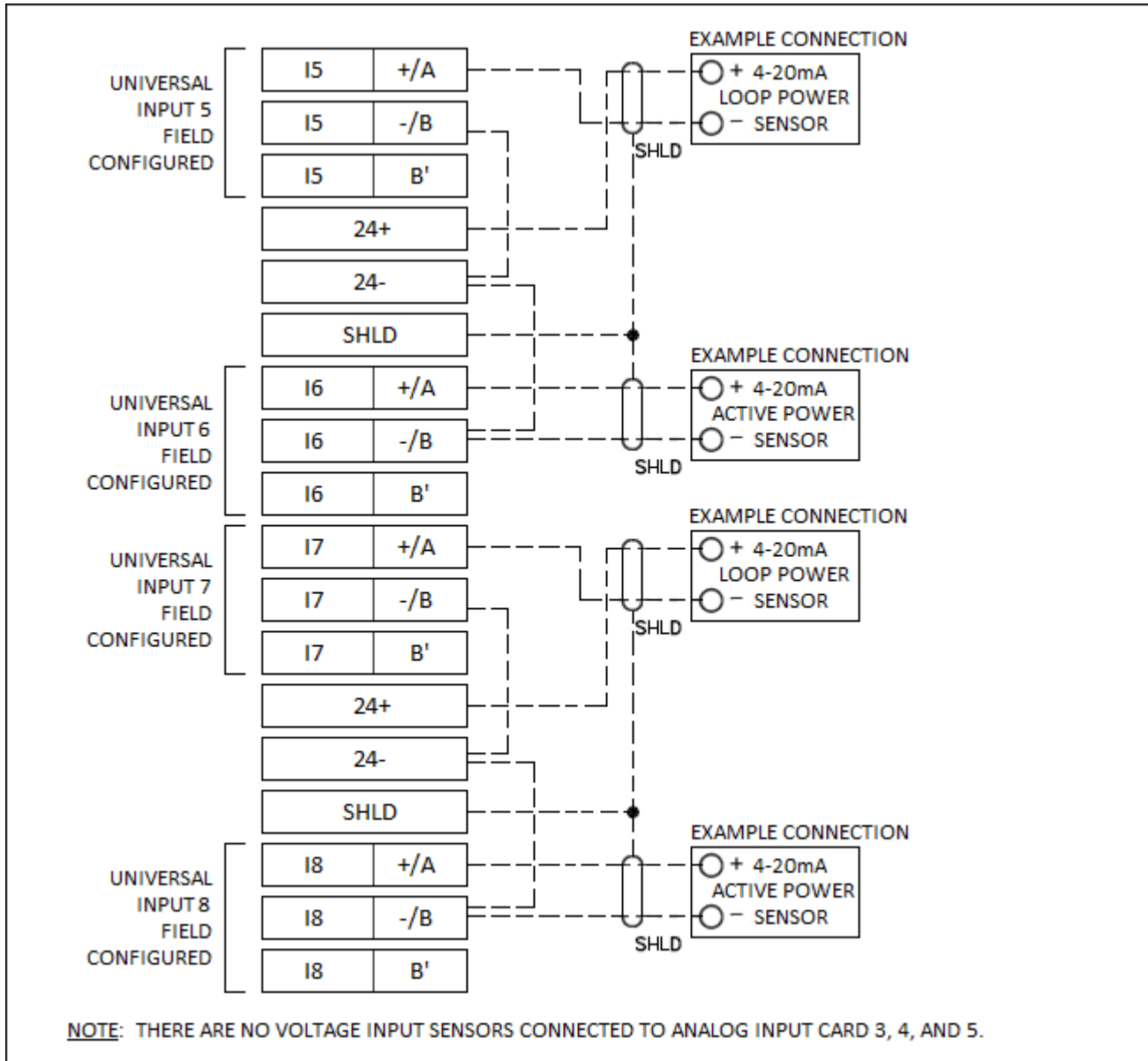
Dedicated analog outputs option, used for feedwater and circulating pump VFD control, 4-20mA only terminals:



Connections (continued)

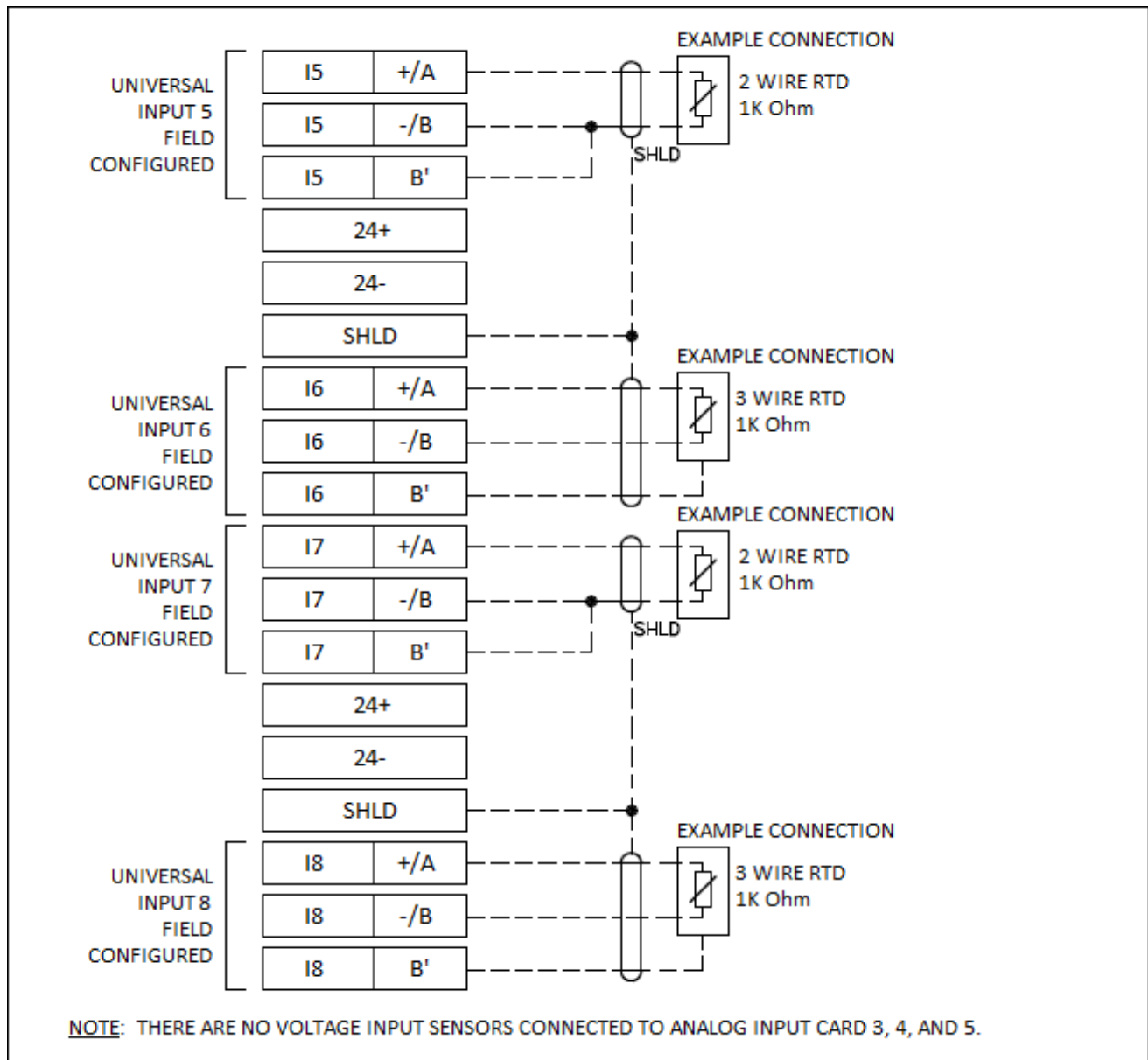
12 Universal inputs

The first four universal input terminals with current transmitter example connections:



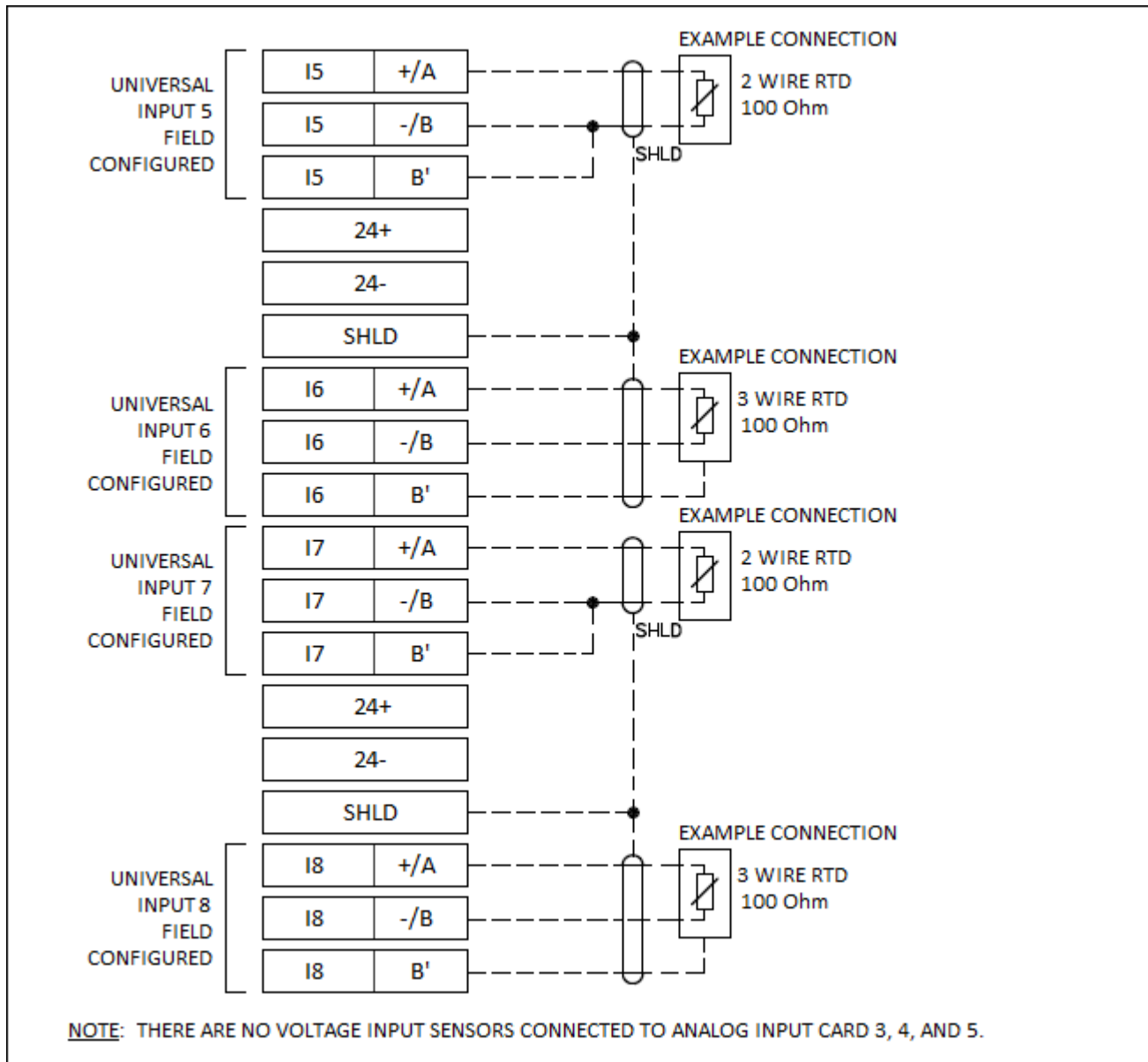
Connections (continued)

The first four universal input terminals with RTD 1000 Ohm example connections:



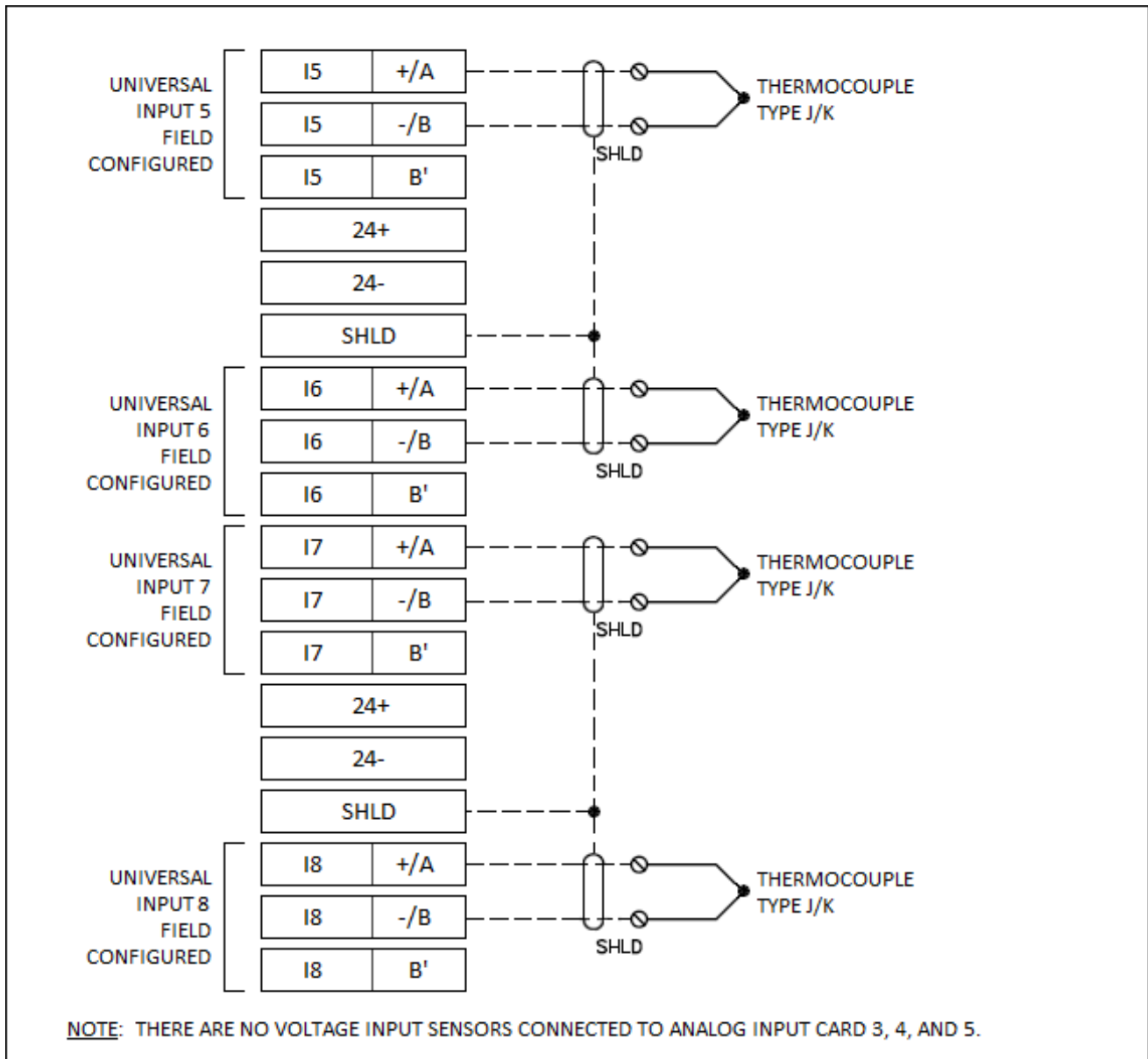
Connections (continued)

The first four universal input terminals with RTD 100 Ohm example connections:



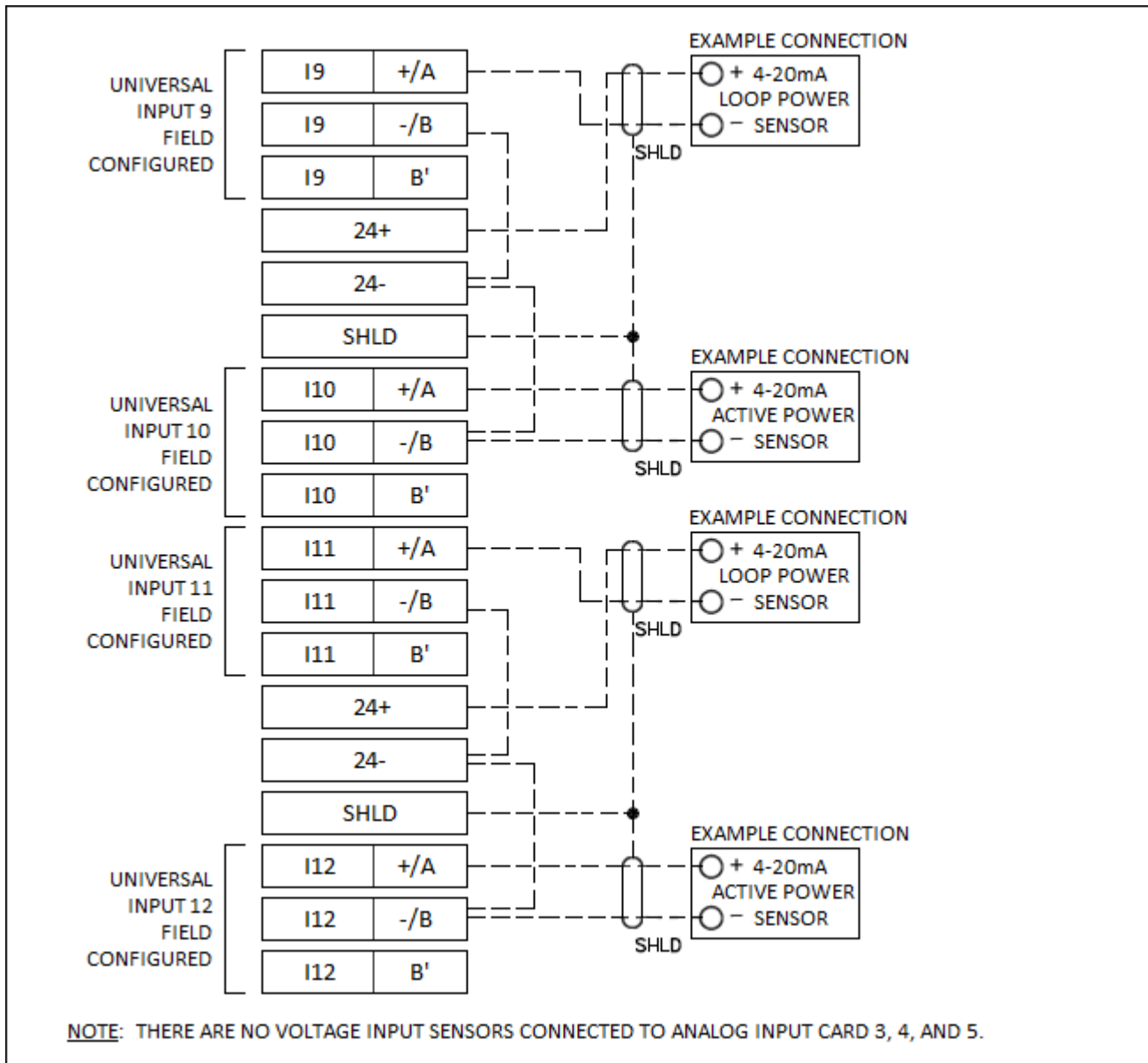
Connections (continued)

The first four universal input terminals with thermocouple type J/K example connections:



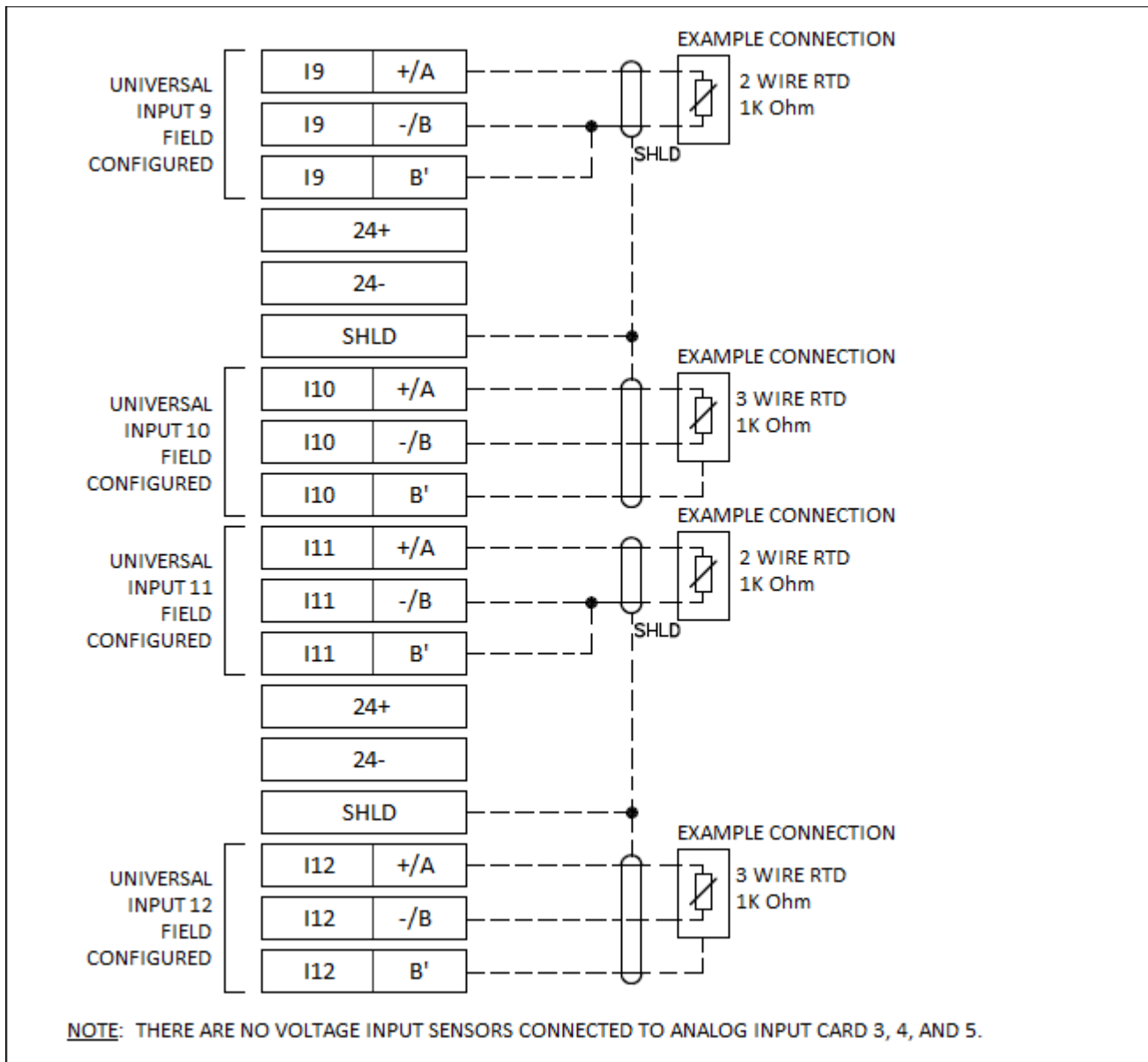
Connections (continued)

The second four universal input terminals with current transmitter example connections:



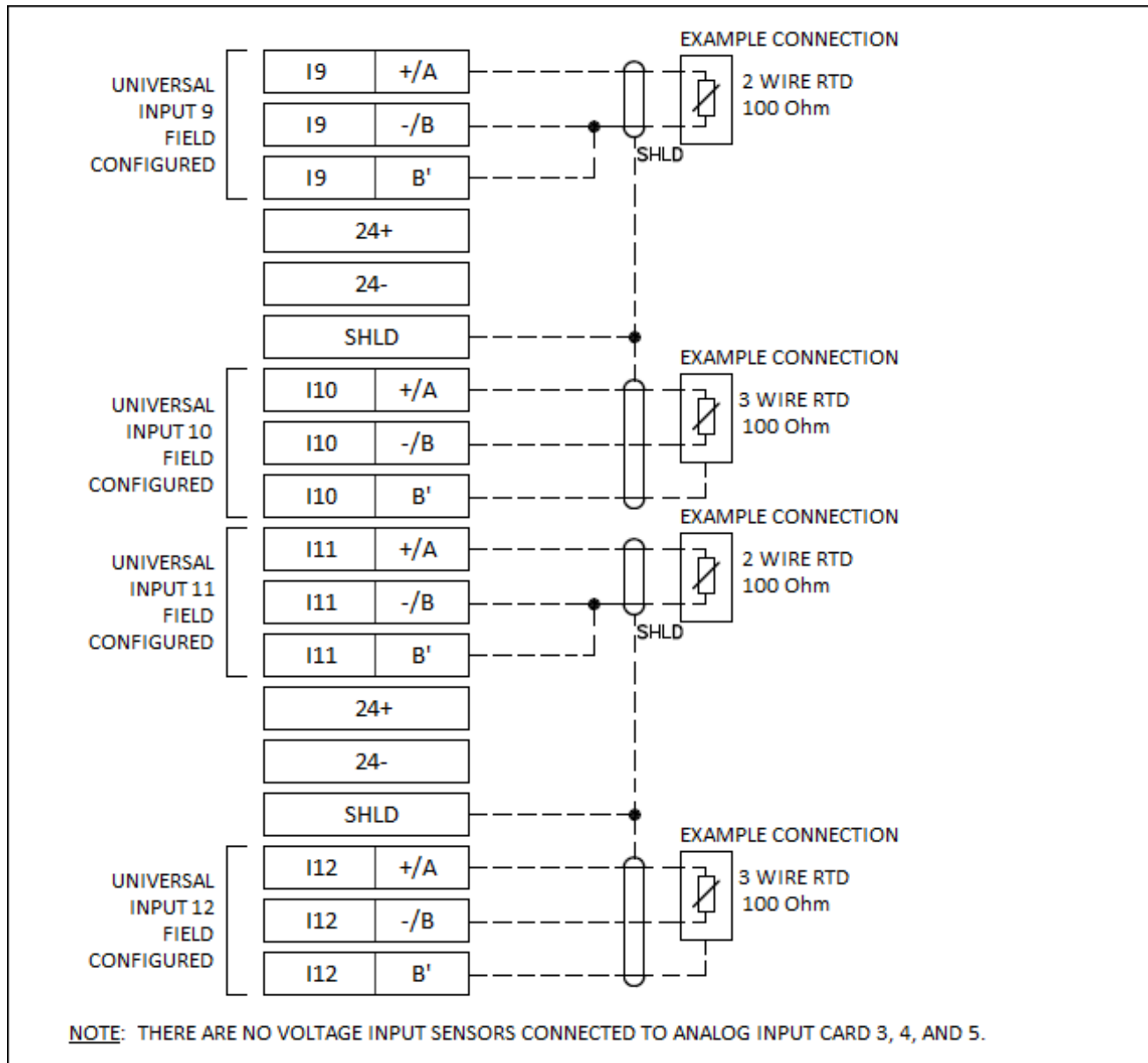
Connections (continued)

The second four universal input terminals with RTD 1000 Ohm connections:



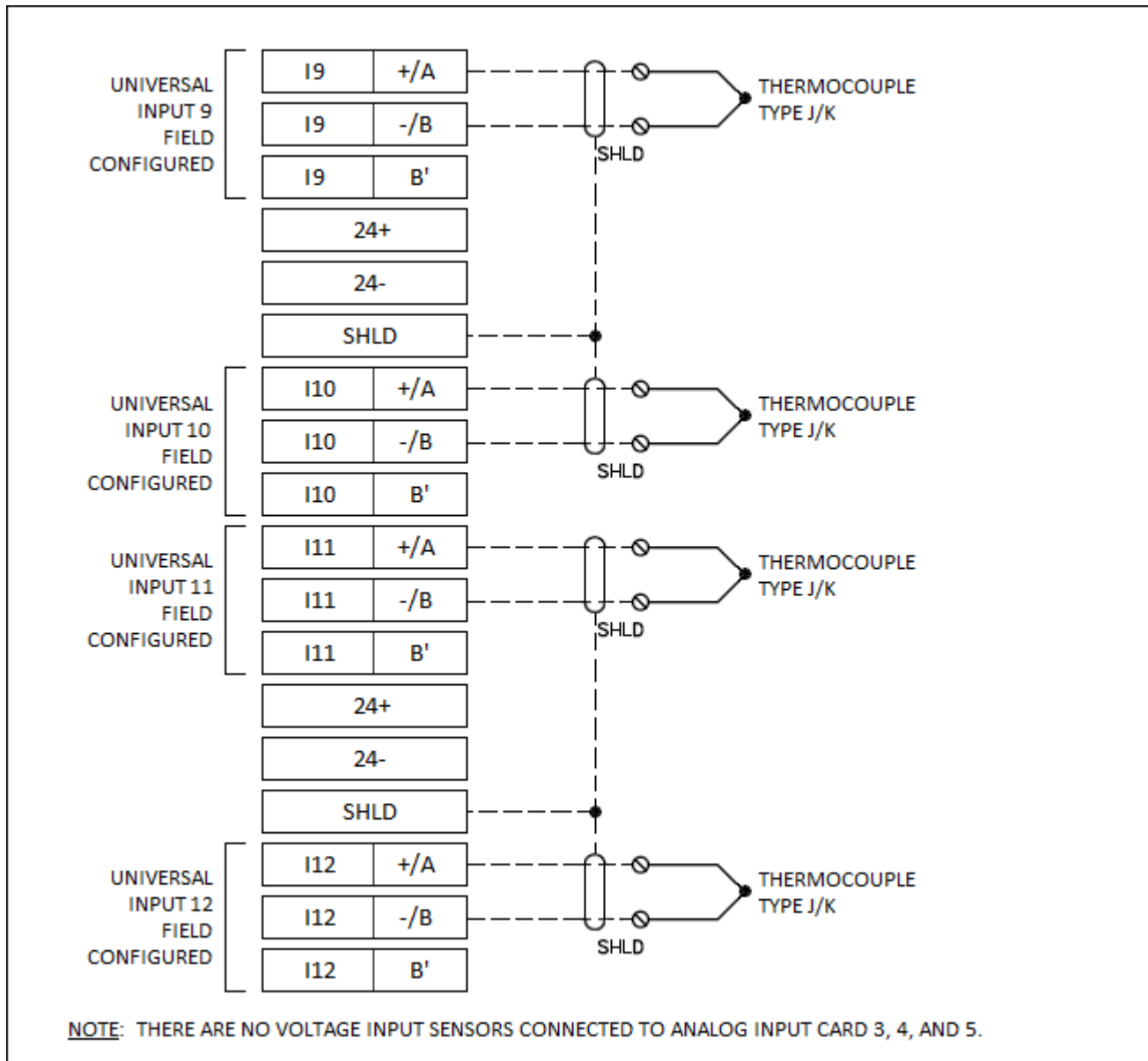
Connections (continued)

The second four universal input terminals with RTD 100 Ohm connections:



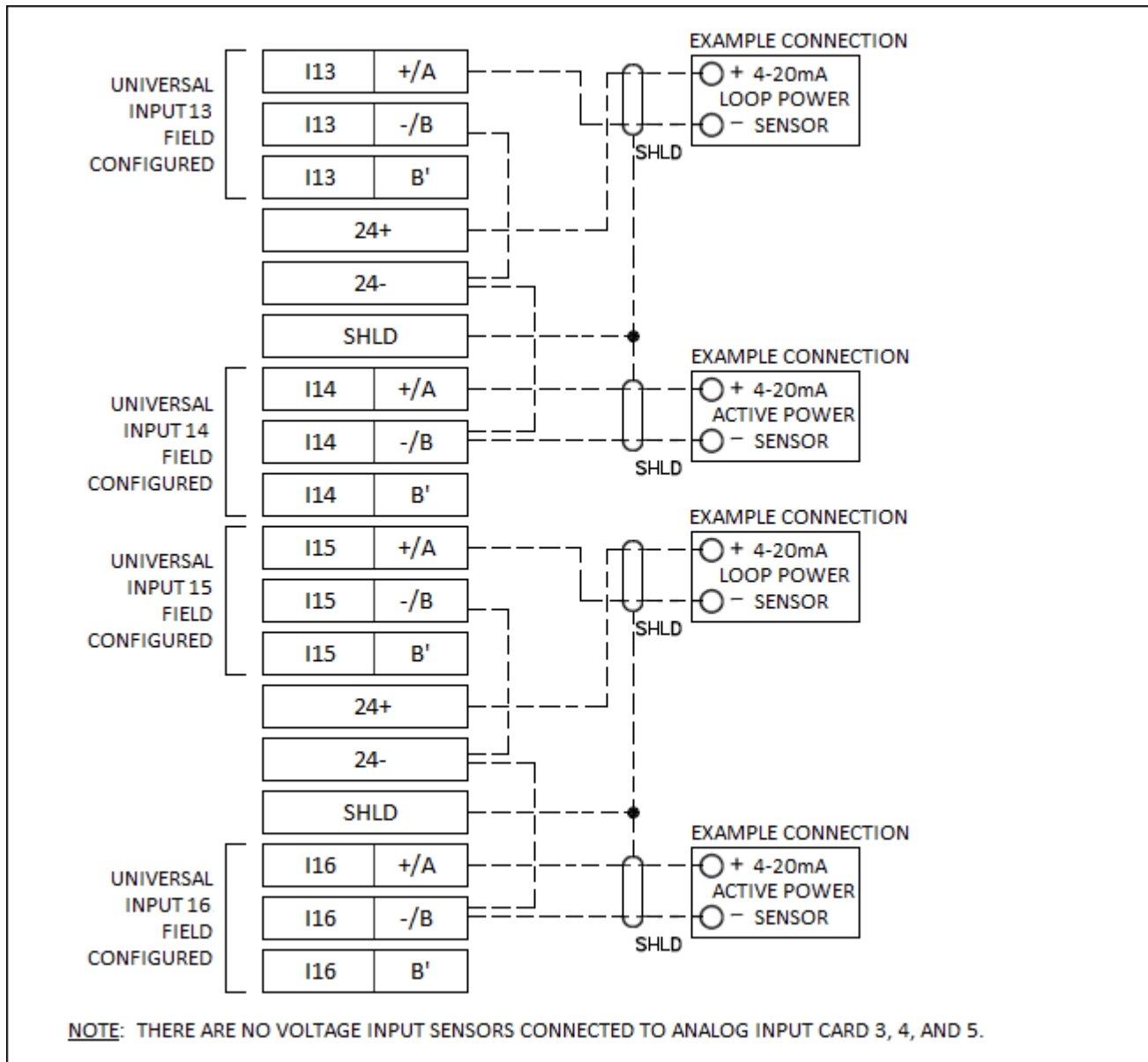
Connections (continued)

The second four universal input terminals with thermocouple type J/K example connections:



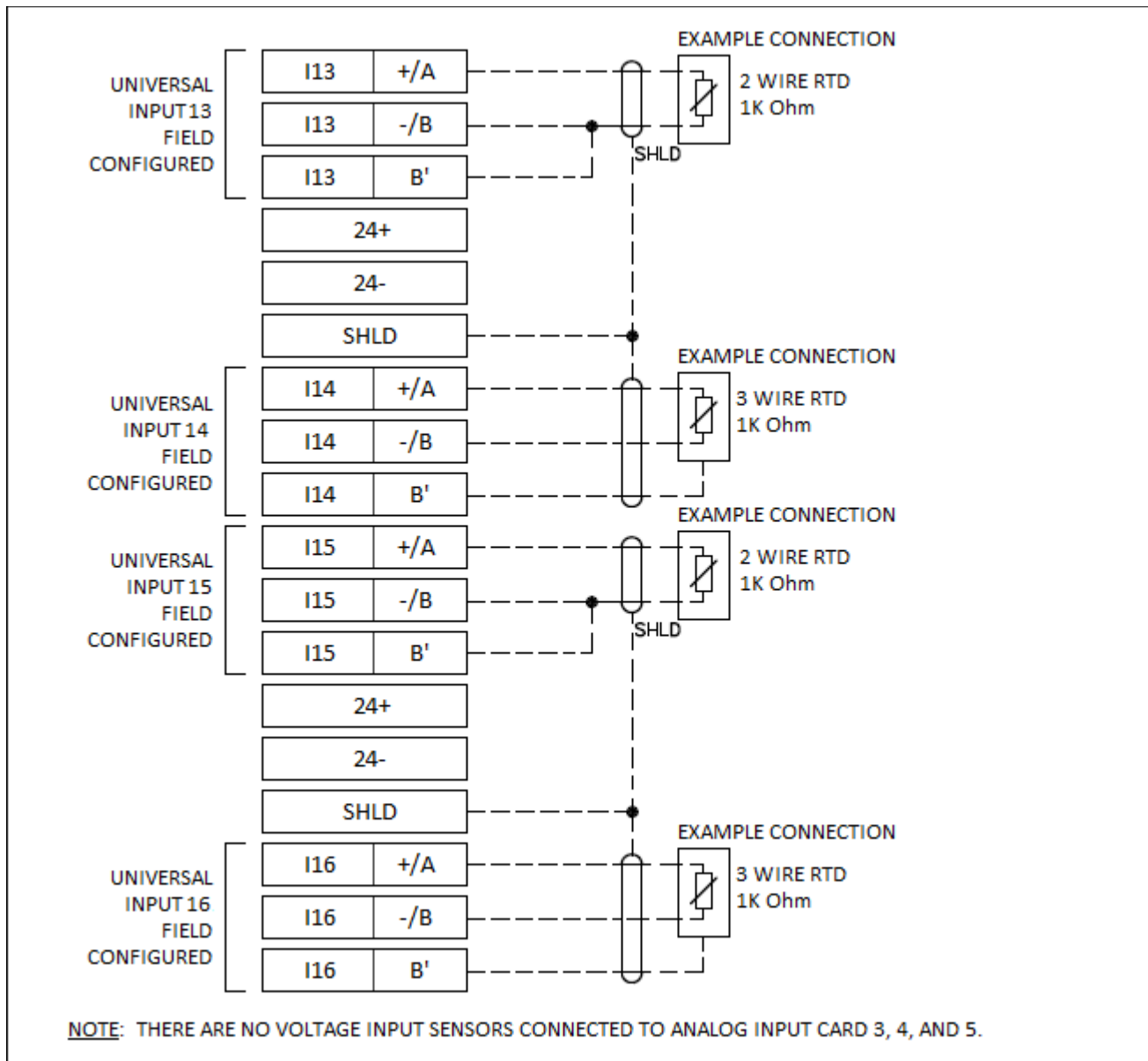
Connections (continued)

The third four universal input terminals with current transmitter connections:



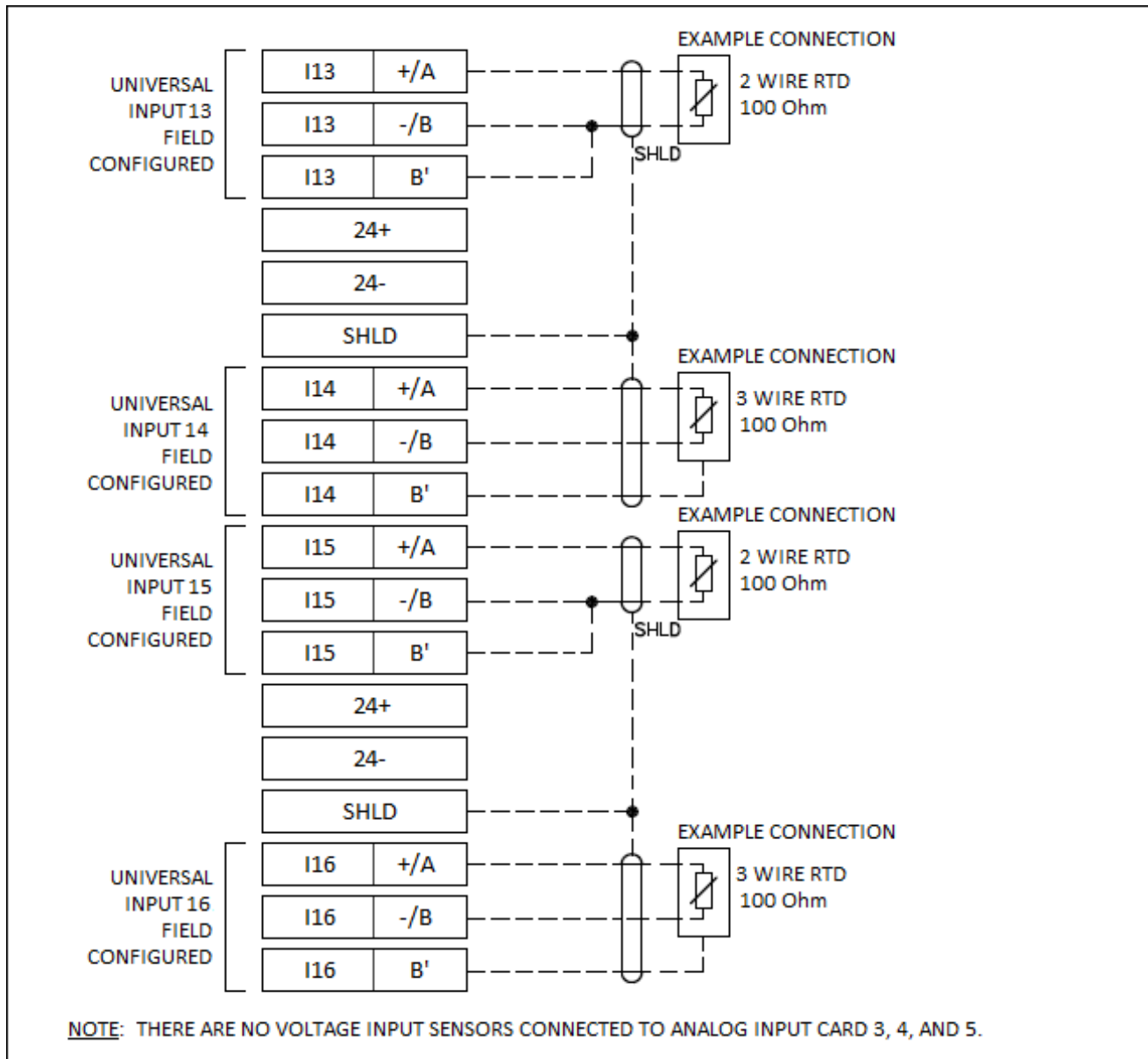
Connections (continued)

The third four universal input terminals with RTD 1000 Ohm connections:



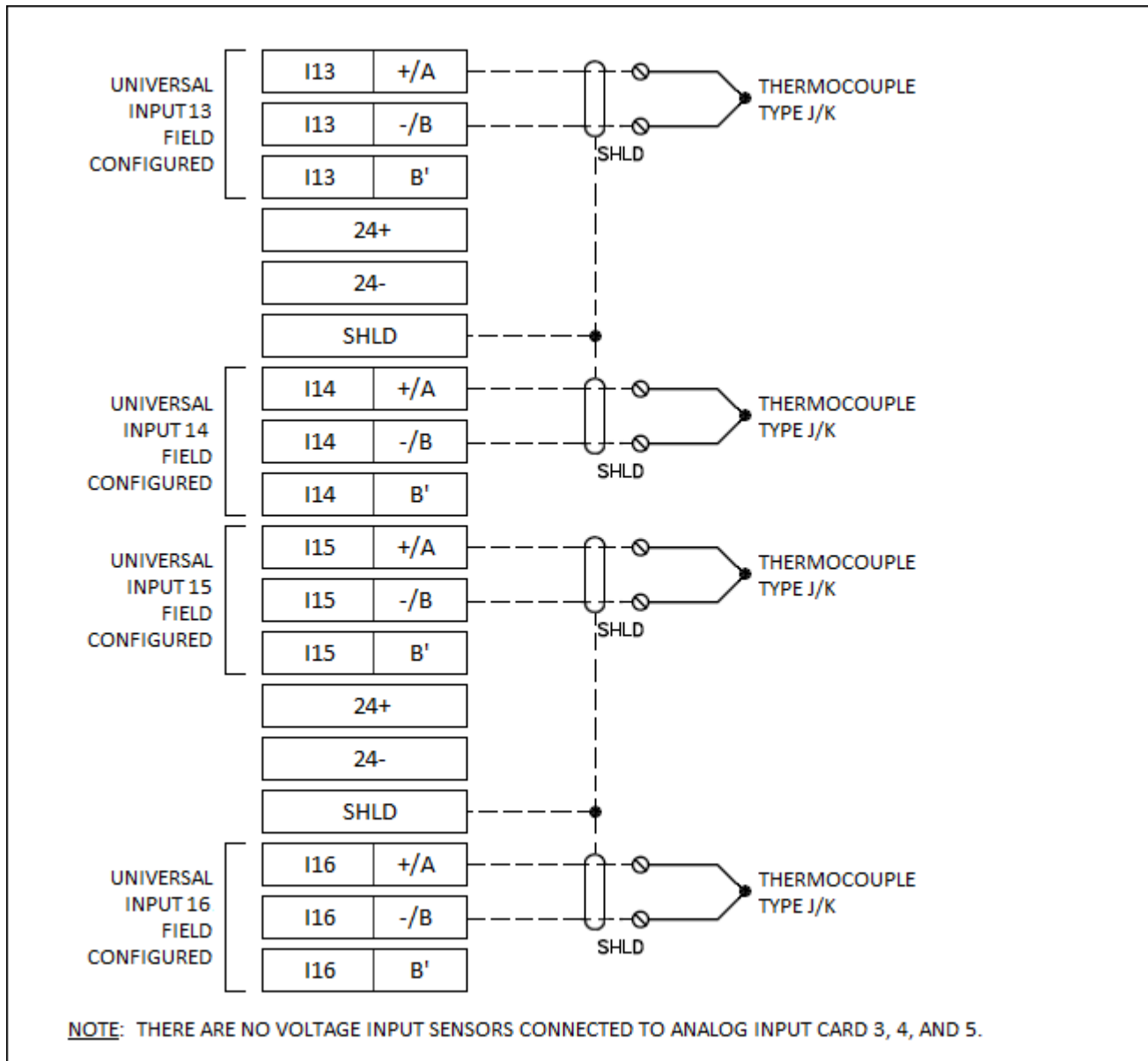
Connections (continued)

The third four universal input terminals with RTD 100 Ohm connections:



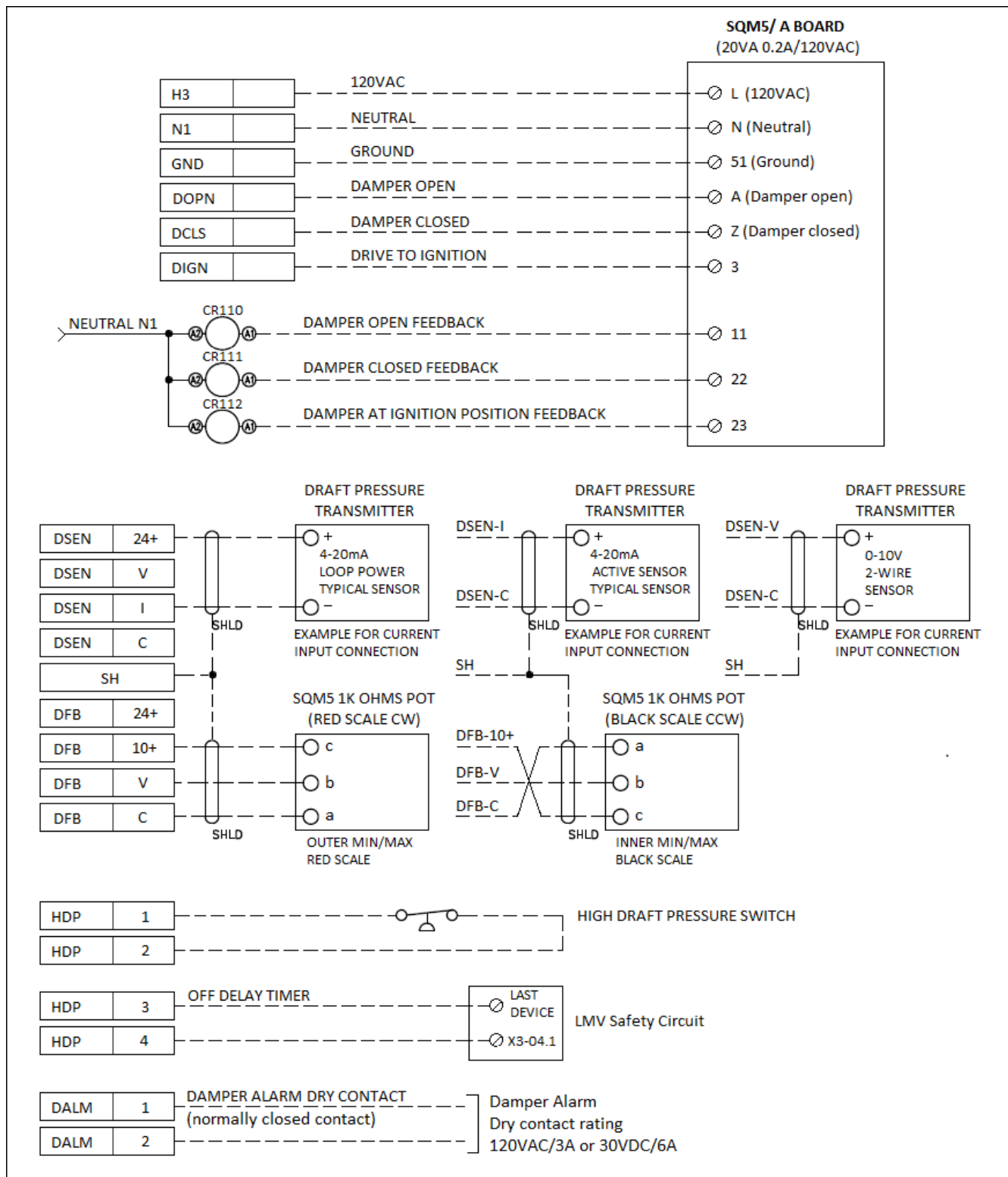
Connections (continued)

The third four universal input terminals with thermocouple type J/K example connections:



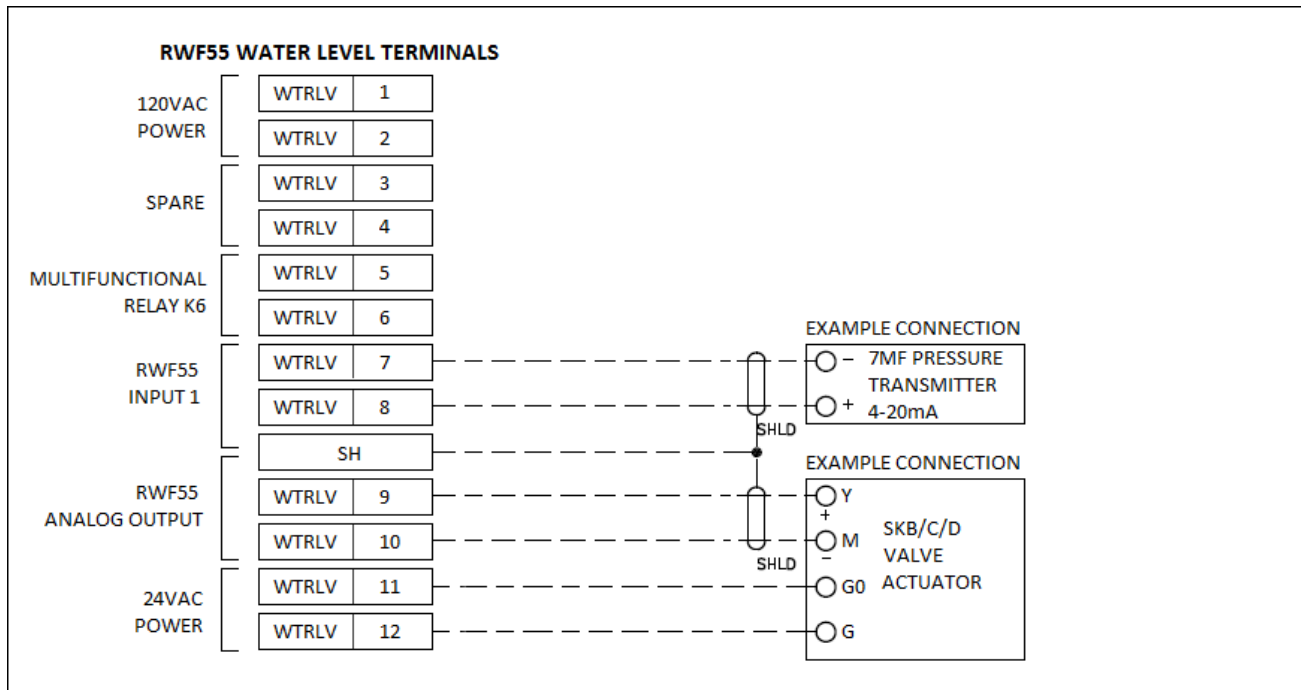
Connections (continued)

Draft Control:



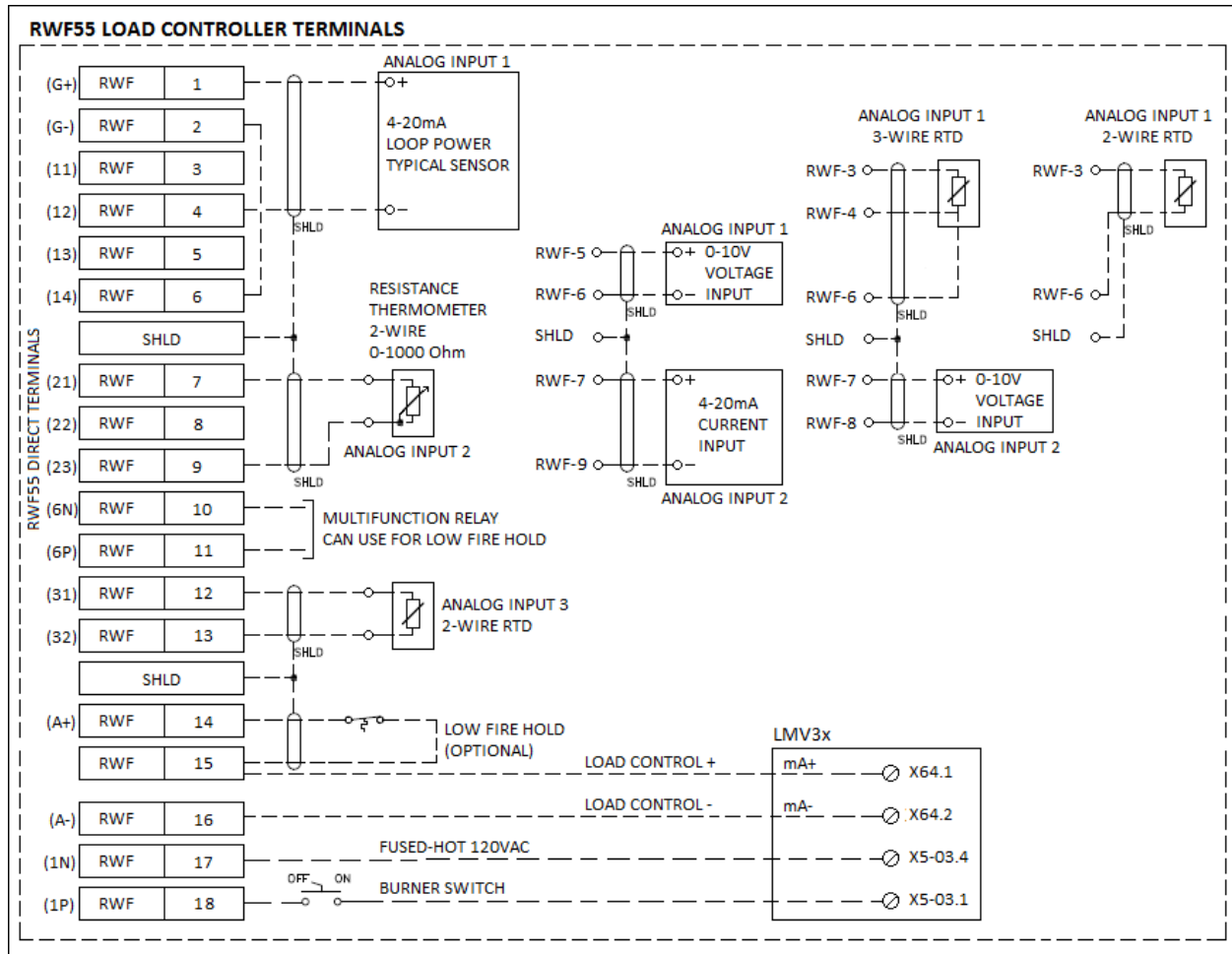
Connections (continued)

RWF55 Water level:



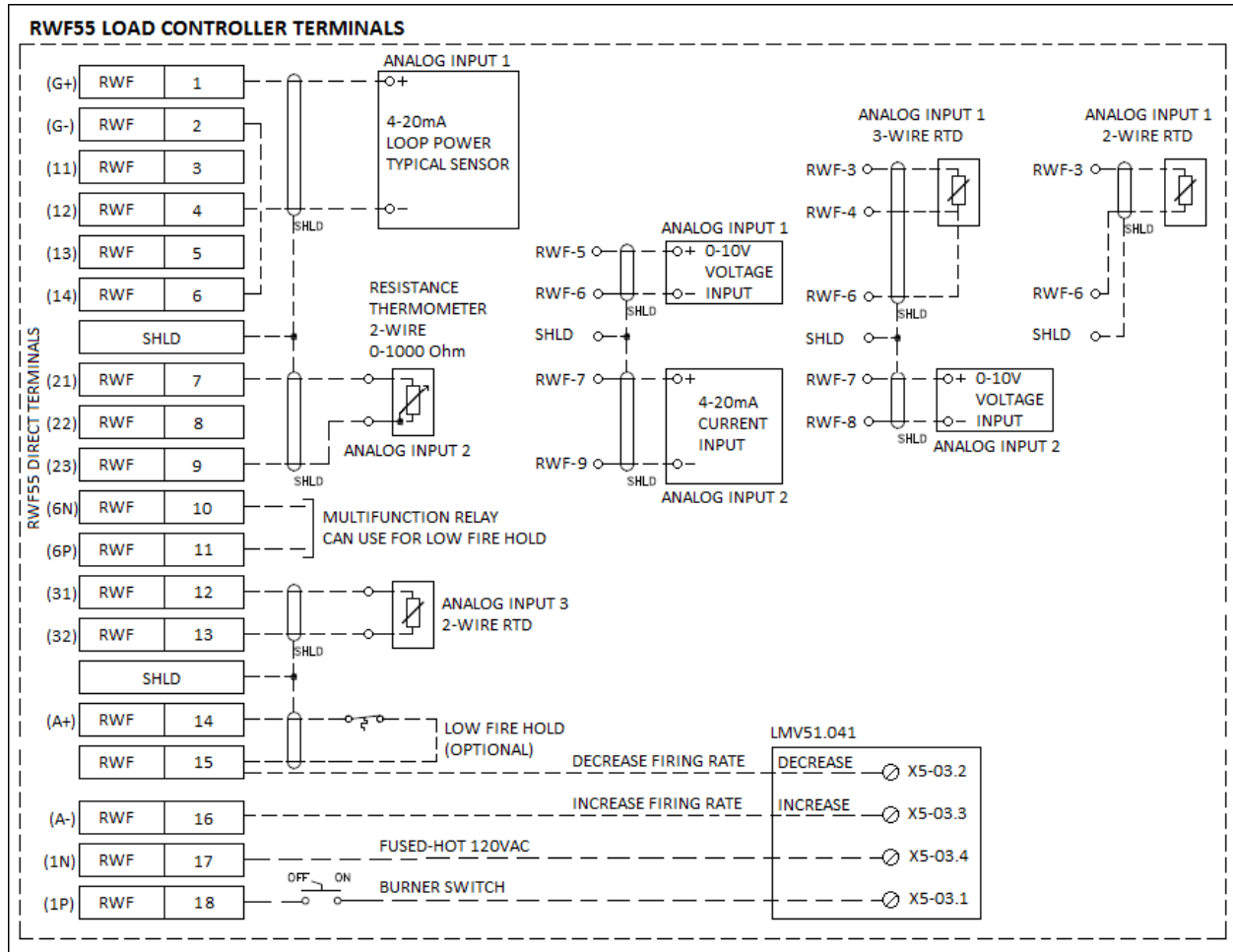
Connections (continued)

RWF55 Load Control with LMV3x:



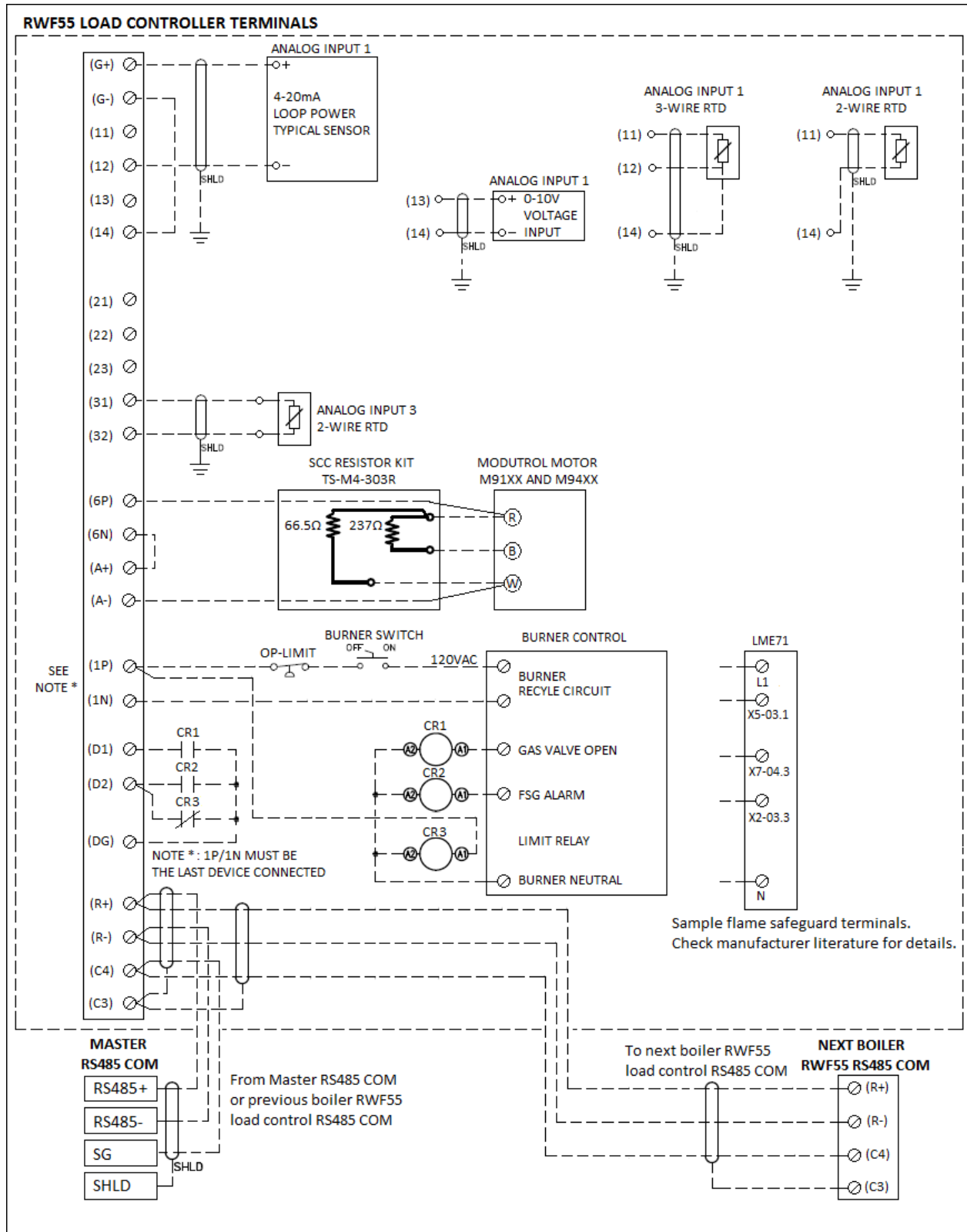
Connections (continued)

RWF55 Load Control with LMV51.040:



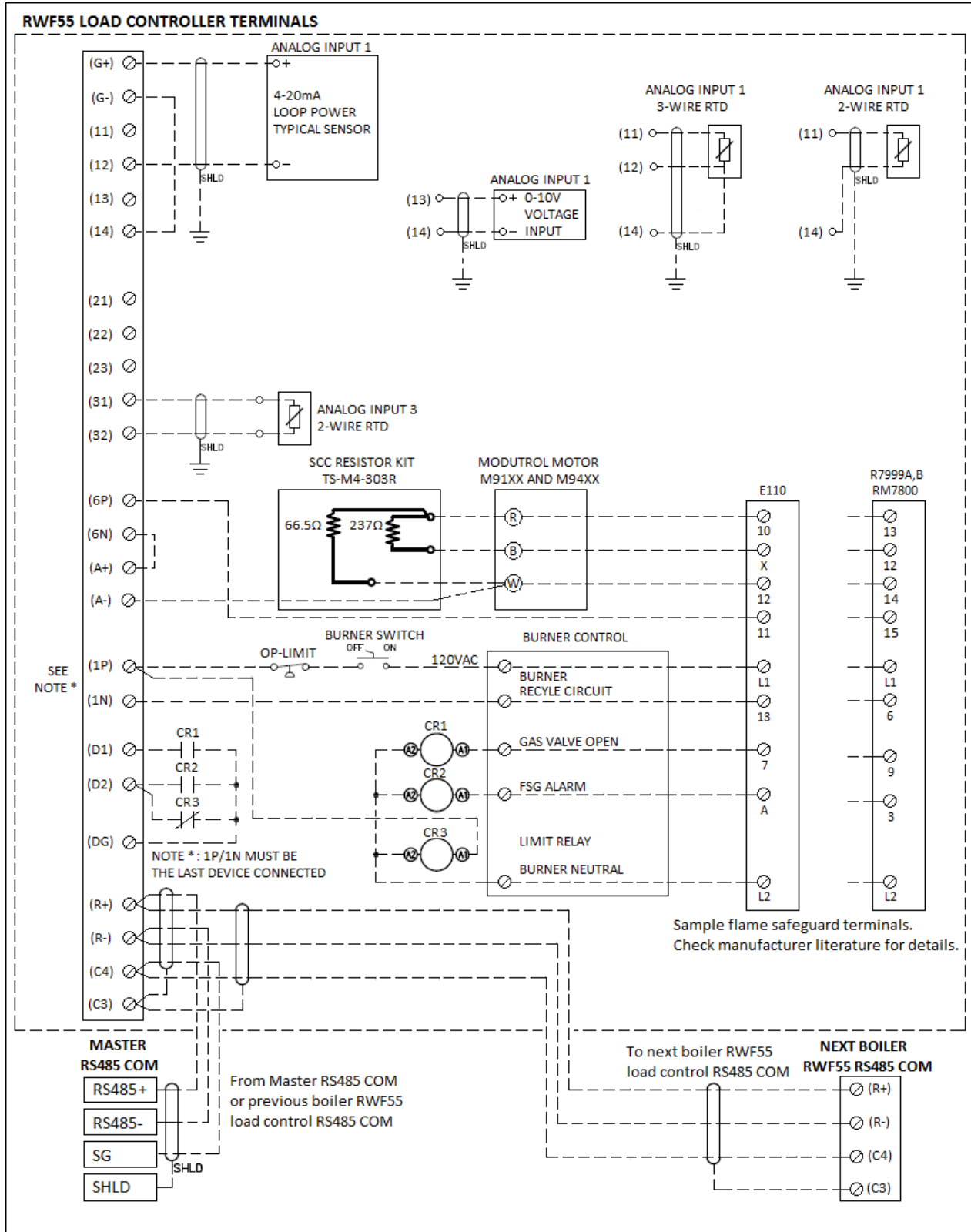
Connections (continued)

RWF55 Load Control only; connections with flame safeguard LME71:



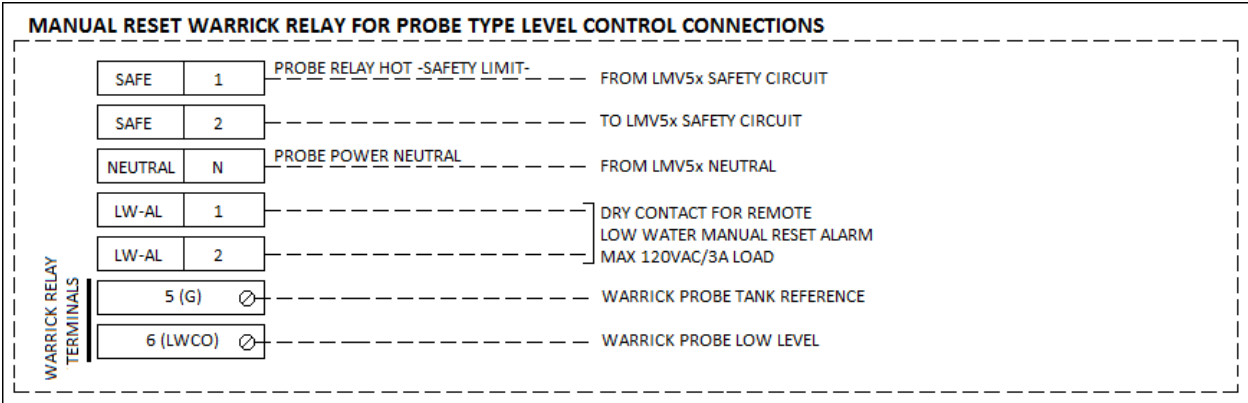
Connections (continued)

RWF55 Load Control only; connections with flame safeguard E110 or R7999A, B, RM7800:



Connections (continued)

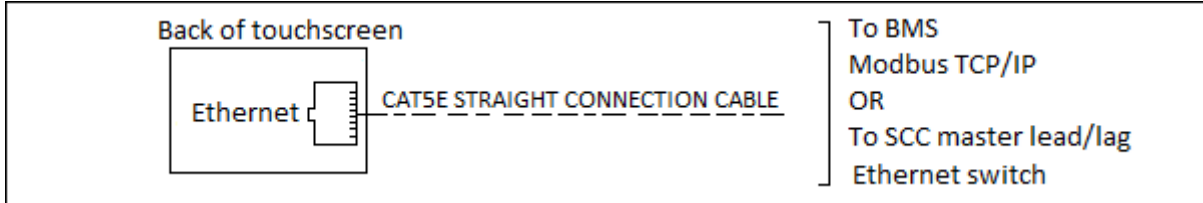
Manual Reset Warrick Relay LWCO



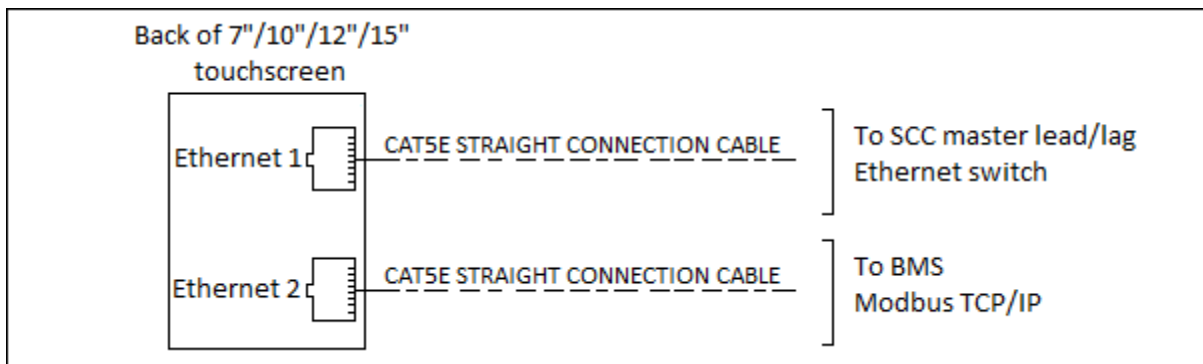
Connections (continued)

BMS Connections

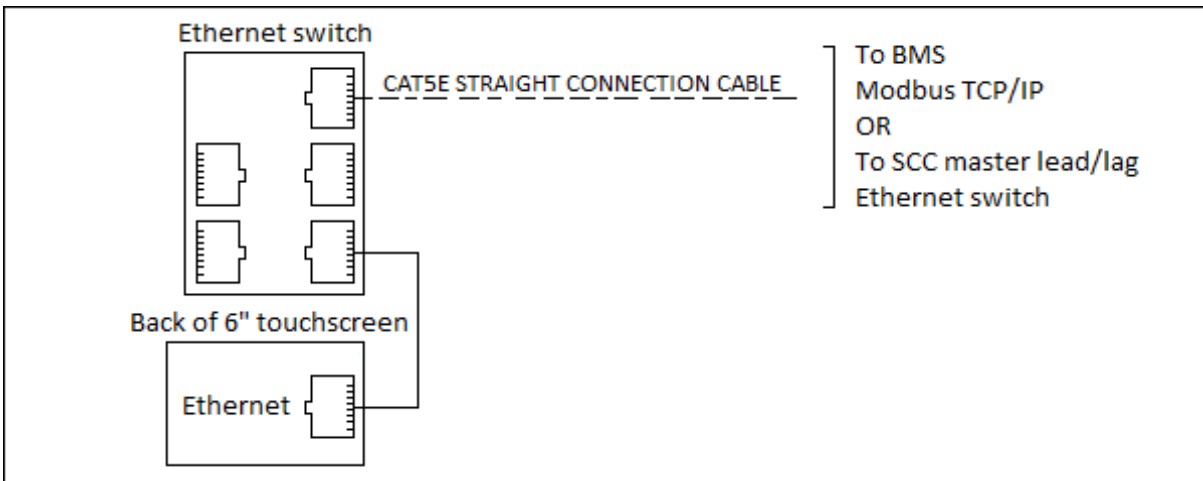
Standard Modbus TCP/IP with 6" touchscreen:



Standard Modbus TCP/IP with 7"/10"/12"/15" touchscreen:

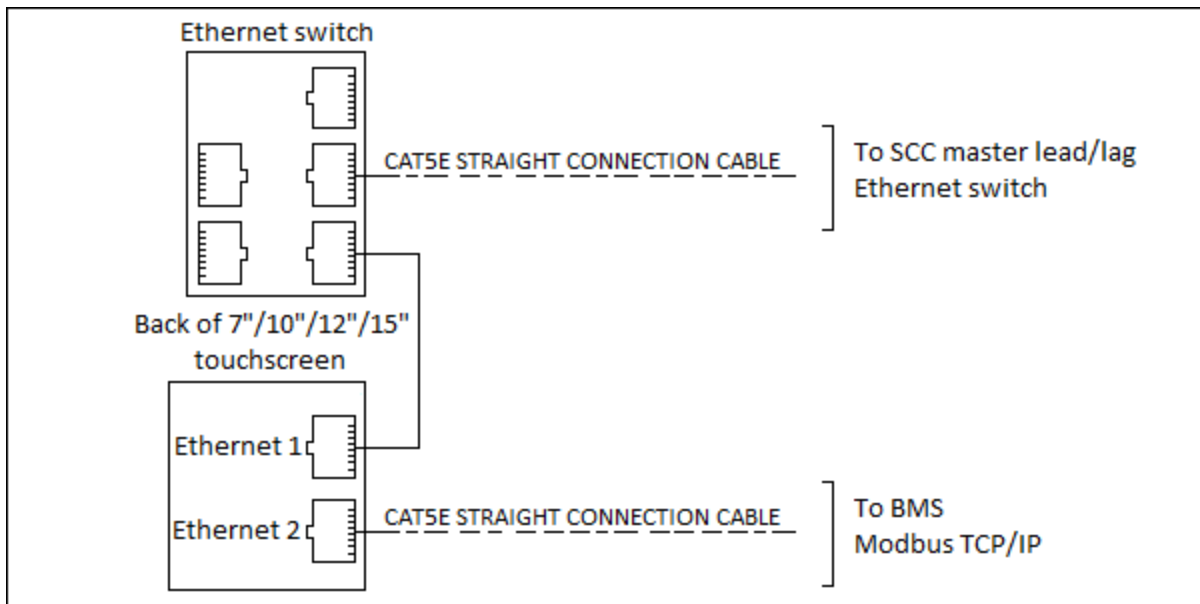


Standard Modbus TCP/IP with 6" touchscreen with PLC annunciation:



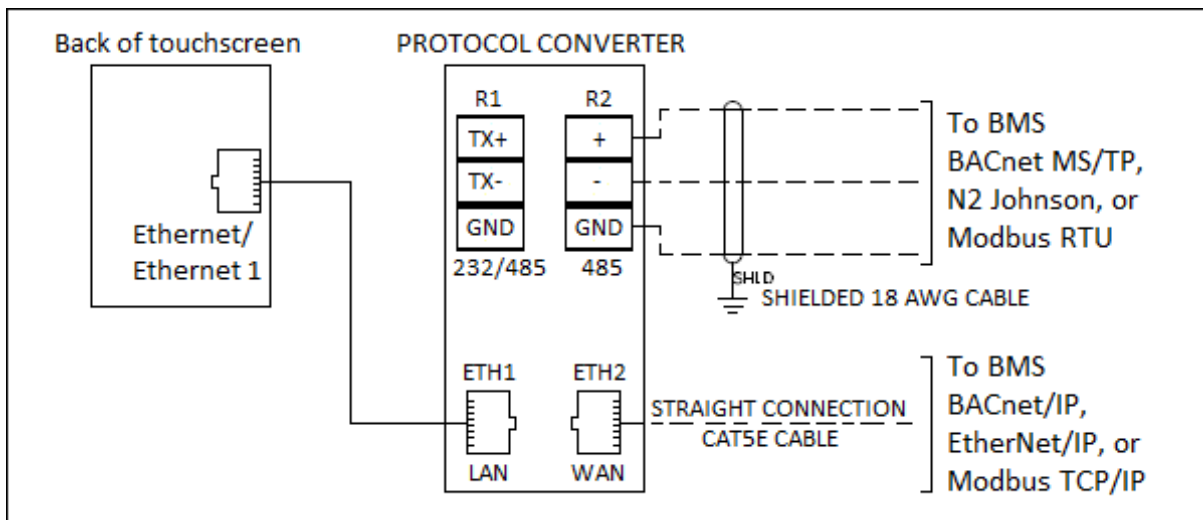
Connections (continued)

Standard Modbus TCP/IP with 7"/10"/12"/15" touchscreen with PLC annunciation:



BACnet/IP, Ethernet/IP, or Modbus TCP/IP: Ethernet connection

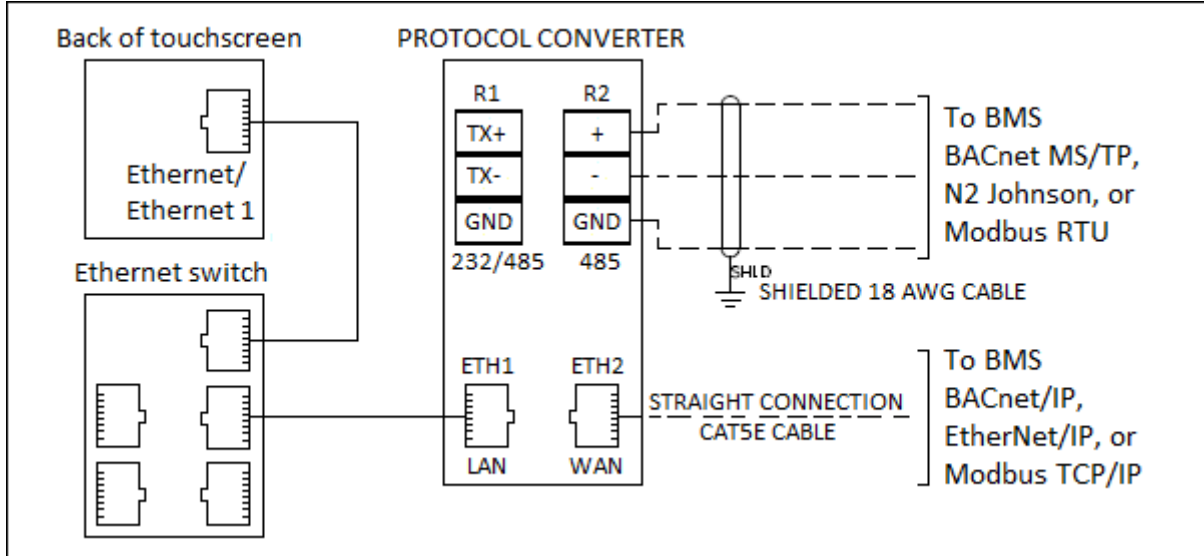
BACnet MS/TP, N2 Johnson Metasys, or Modbus RTU: RS485 connection



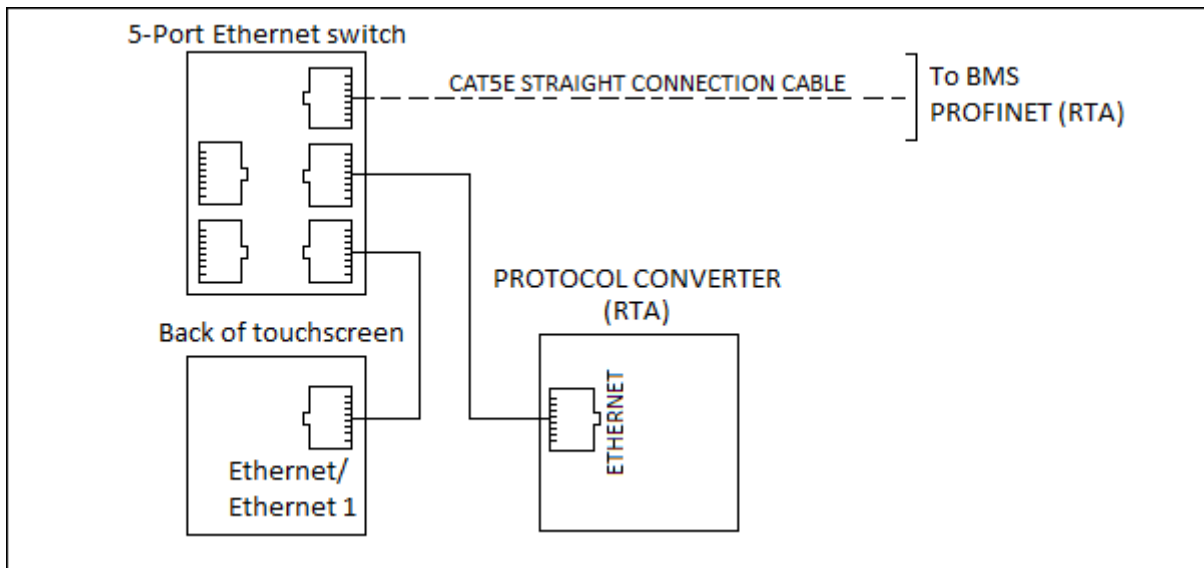
Connections (continued)

BACnet/IP, Ethernet/IP, or Modbus TCP/IP with PLC annunciation: Ethernet connection

BACnet MS/TP, N2 Johnson Metasys, or Modbus RTU with PLC annunciation: RS485 connection

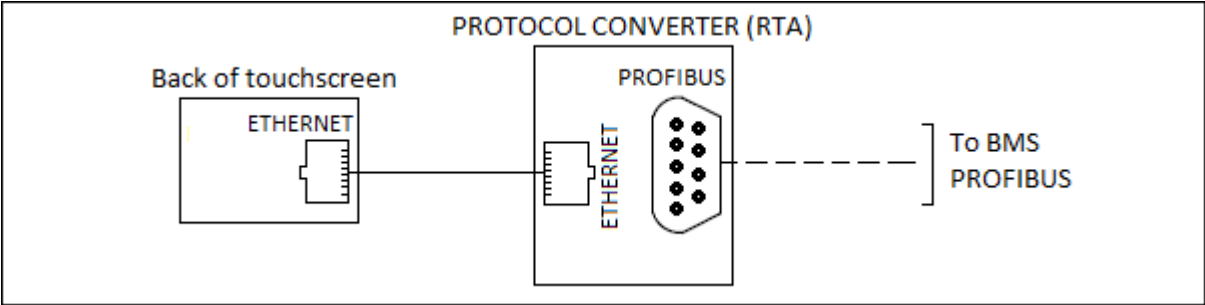


PROFINET:

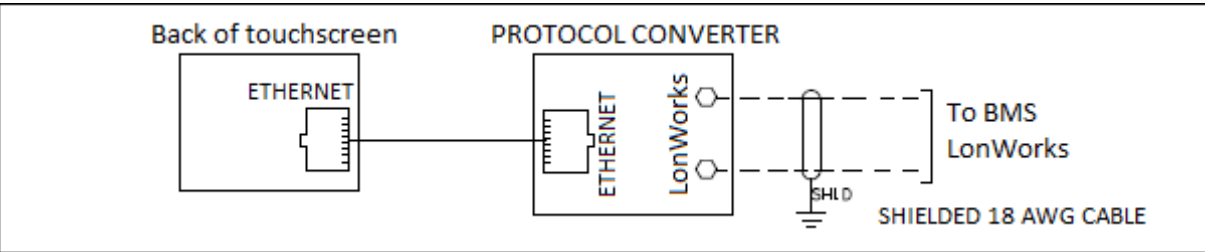


Connections (continued)

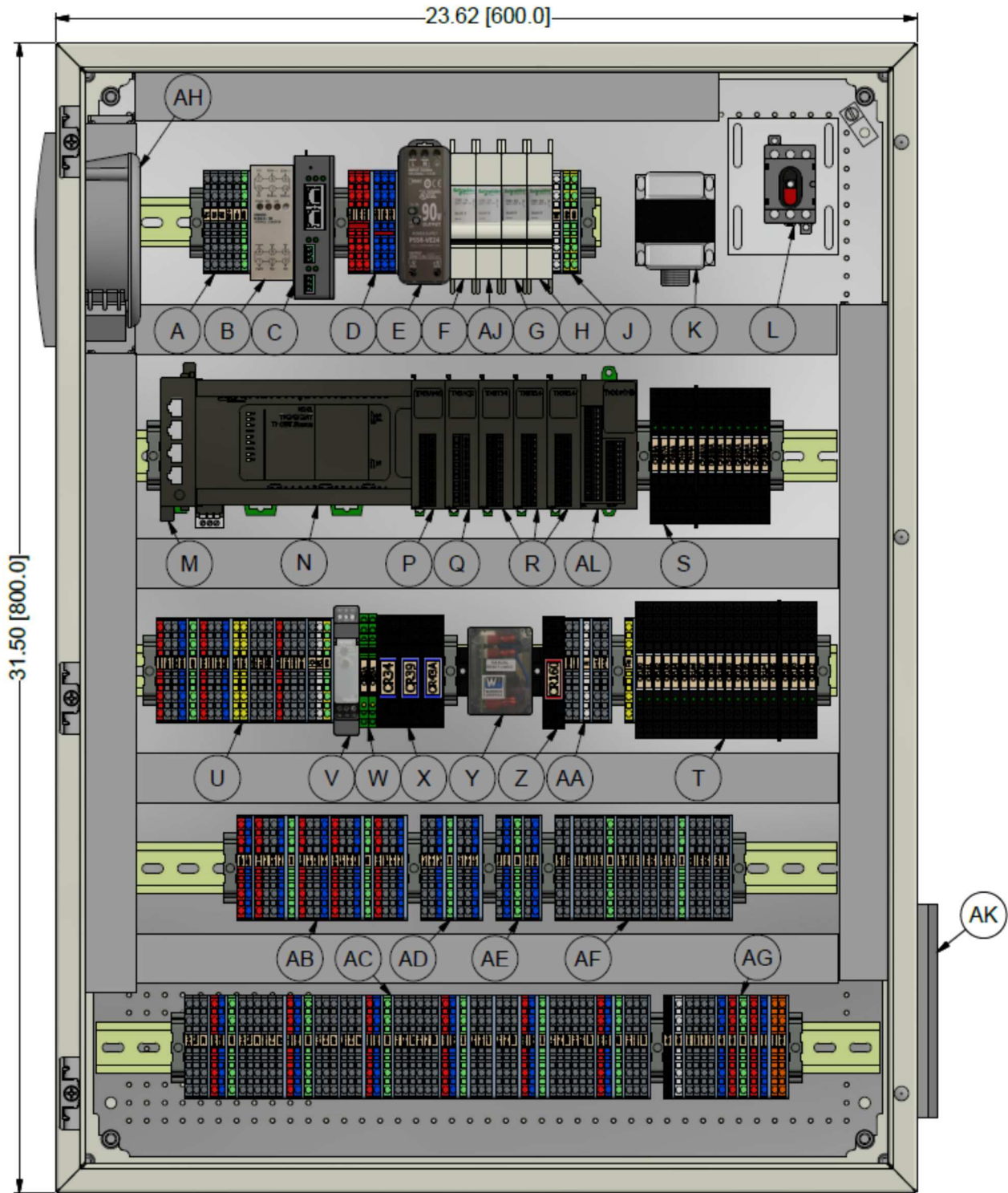
PROFIBUS:



LonWorks:



Parts Descriptions



Parts Descriptions (continued)

A	Modbus RS232 and RS485 Terminals	Standard Component	U	Draft Control Terminals	Draft Control
B	RS232 to RS485 Converter	Touchscreen Location 15ft or More Away from AZL	V	Off Delay Timer	Draft Control
C	BMS Communication BACnet/LON/N2/RTU	BMS Communication Other than Modbus TCP/IP	W	24 VDC Solid State Relays	Draft Control
D	24 VDC Terminals	Standard Component	X	24 VDC DPDT Relays	Draft Control
E	24 VDC Power Supply	Standard Component	Y	Manual Reset Warrick Relay	Manual Reset Warrick Relay
F	1 Amp Draft Control Circuit Breaker	Draft Control	Z	120VAC DPDT Relay	Manual Reset Warrick Relay
G	3 Amp Load Control and Water Level Control Circuit Breaker	Load Control/Water Level Control	AA	Warrick Relay Terminals	Manual Reset Warrick Relay
H	3 Amp Main Circuit Breaker	Standard Component	AB	Dedicated Analog Input Terminals	(4) Dedicated Analog Inputs and (2) Analog Outputs
J	Neutral and Ground Terminals	Standard Component	AC	General Analog Input Terminals	(4), (8) or (12) additional Universal Input Terminals
K	24 VAC SKB/C or D Transformer	Water Level Control	AD	Analog Output Terminals	(4) Dedicated Analog Inputs and (2) Analog Outputs
L	16 Amp Non-Fused Disconnect	Standard Component	AE	PLC Feedwater/Water Level or Circulating Pump VFD Control Terminals	PLC Feedwater/Water Level or Circulating Pump VFD Control
M	Ethernet Switch	Annunciation or BACnet/IP, or Ethernet/IP BMS Communication	AF	Load Control Terminals	Load Control
N	Programmable Logic Controller (PLC)	Annunciation or Draft Control	AG	Water Level Control Terminals	Water Level Control
P	Analog I/O Module	(4) Analog Inputs and (2) Analog Outputs	AH	Cooling Fan	Cooling Fan
Q	Analog Output Module	PLC Feedwater/Water Level or Circulating Pump VFD Control	AJ	2A Cooling Fan Breaker	Cooling Fan
R	Analog Input Module(s)	(4) Universal Inputs per Module	AK	Air Intake Filter	Cooling Fan
S	24 VDC SPDT Output Relays	Annunciation	AL	Digital Input/Output Module	(16) Additional Digital inputs and (8) Additional Digital Outputs
T	120 VAC SPDT Relays	Annunciation/Draft Control			

Touchscreen Dimensions and Cut-outs

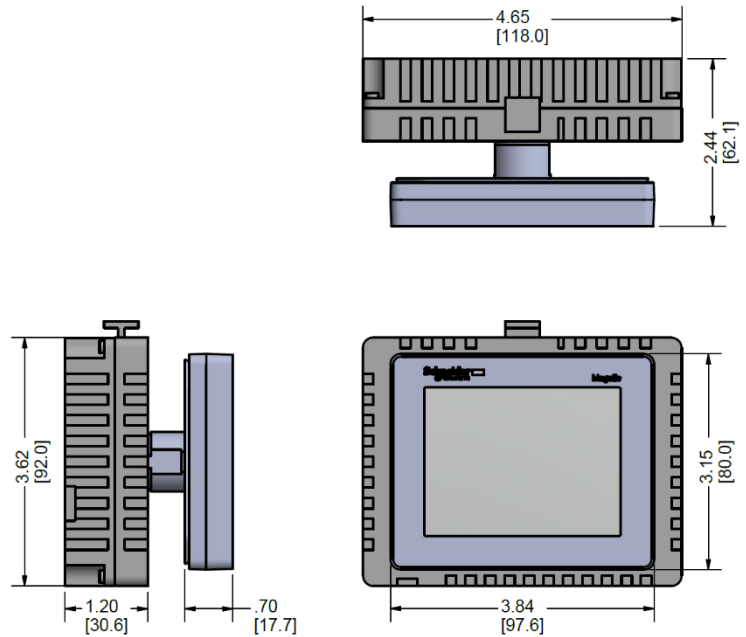
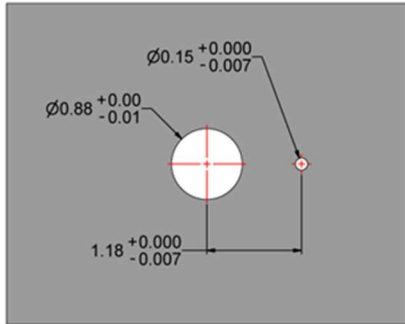
Dimensions in inches; millimeters in brackets

3" Touchscreen

TS-3xxx-xxx-xxxx

Installation:

Cutout required as shown below

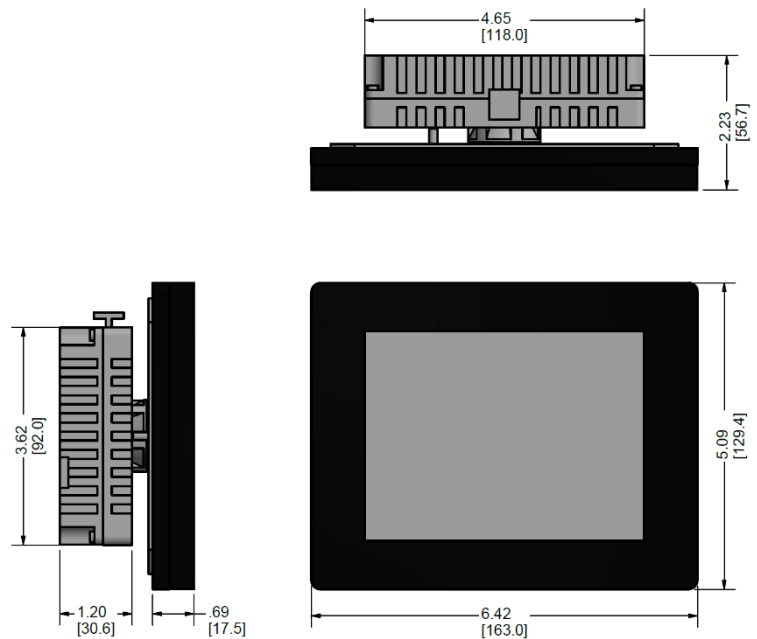
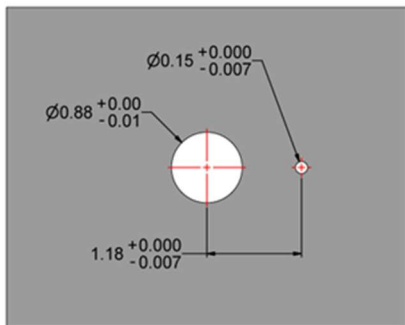


6" Touchscreen

TS-6xxx-xxx-xxxx

Installation:

Cutout required as shown below

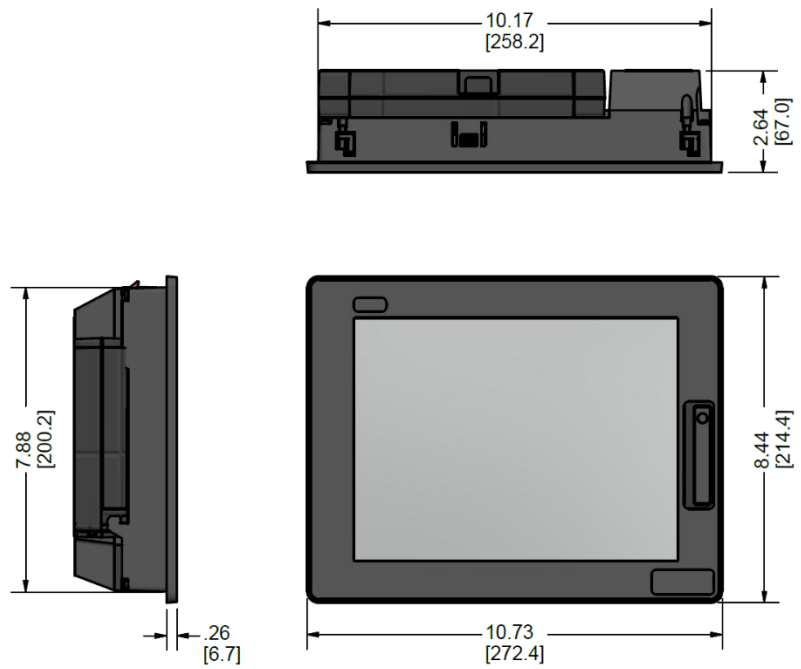
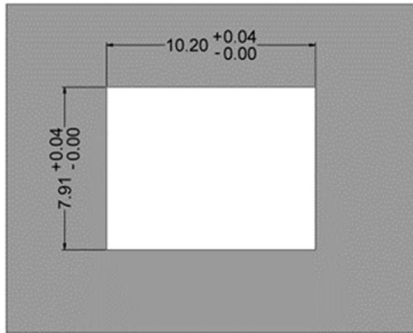


10" Touchscreen

TS-0xxx-xxx-xxxx

Installation:

Cutout required as shown below

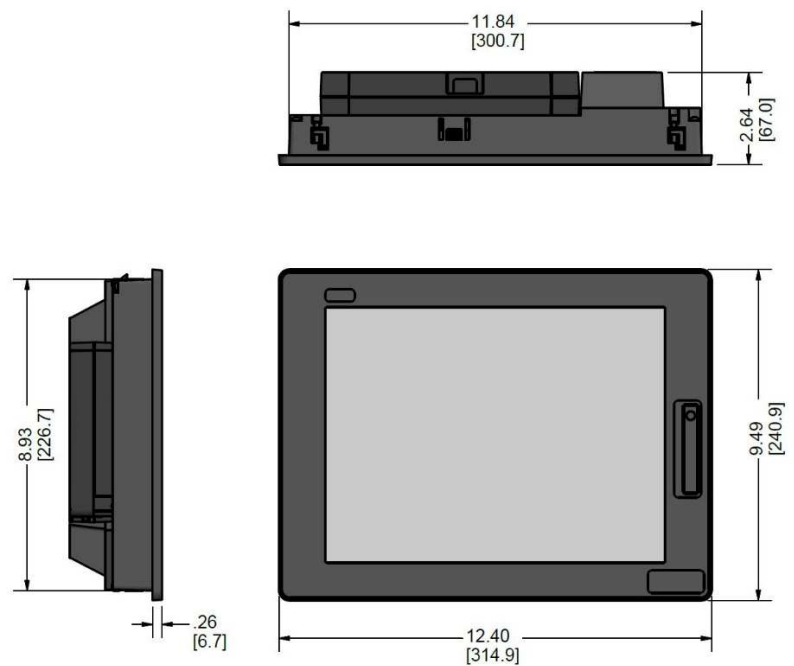
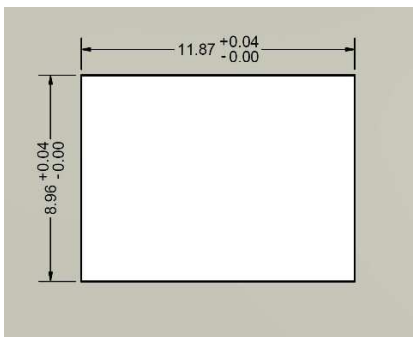


12" Touchscreen

TS-2xxx-xxx-xxxx

Installation:

Cutout required as shown below

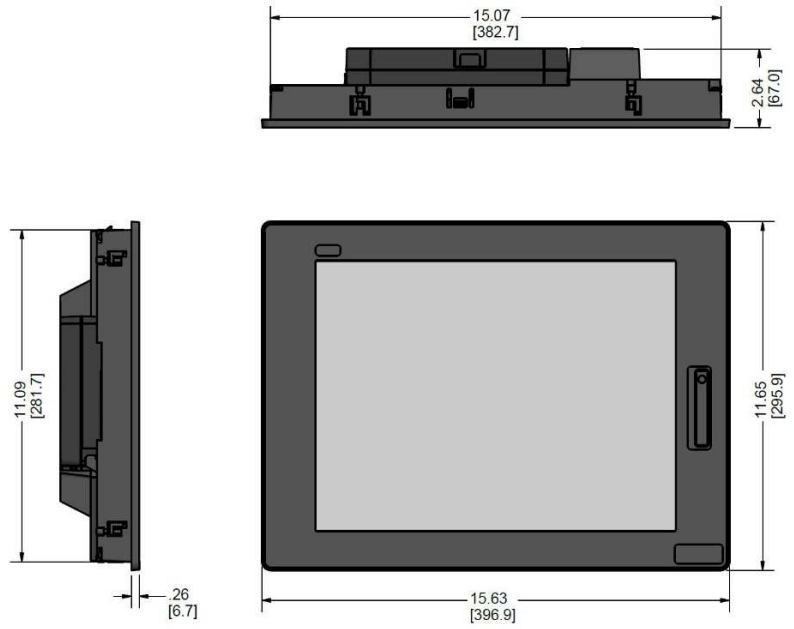
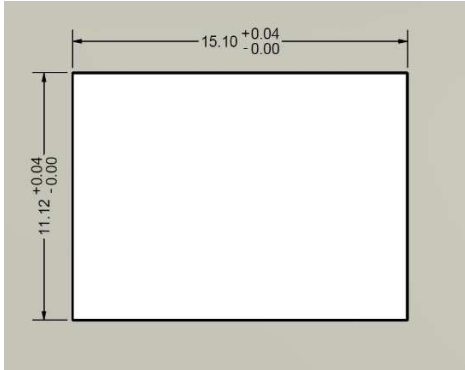


15" Touchscreen

TS-5xxx-xxx-xxx

Installation:

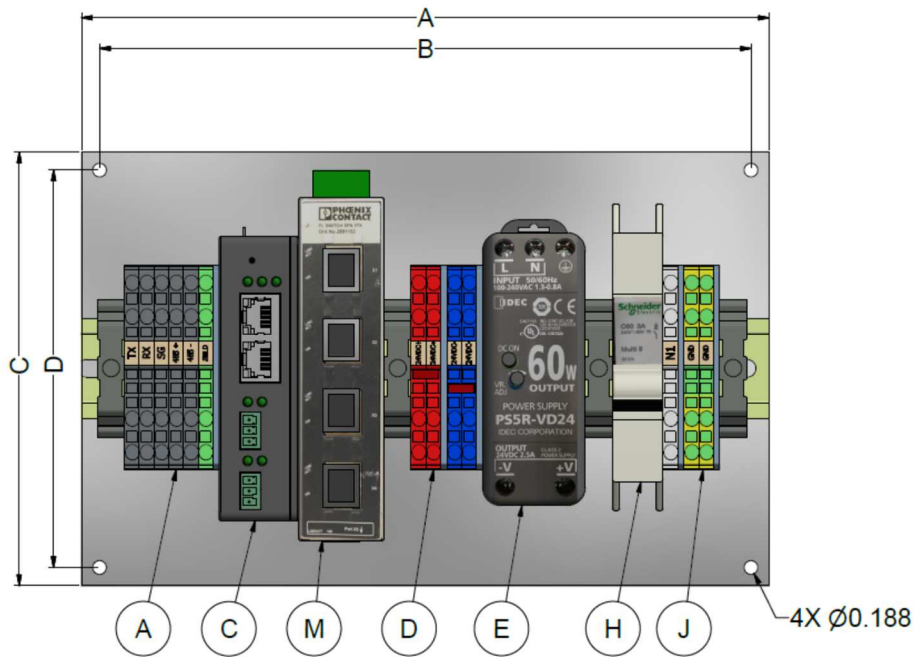
Cutout required as shown below



Kit Dimensions

Reference page 40 for item balloon descriptions
 Lowercase "x" in part number denotes any selection
 Dimensions in inches; millimeters in brackets

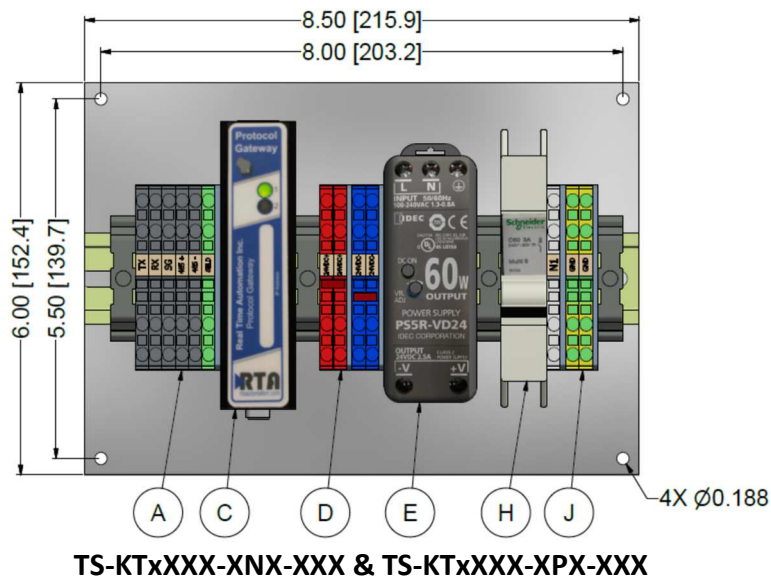
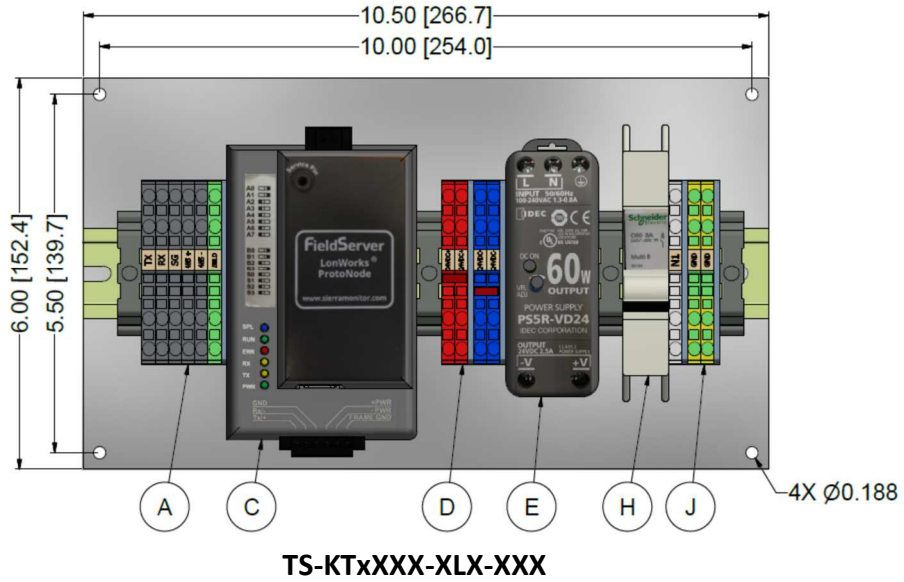
TS-KTxXXX-XBX-XXXX



TS-KTxXXX-XBX-XXX

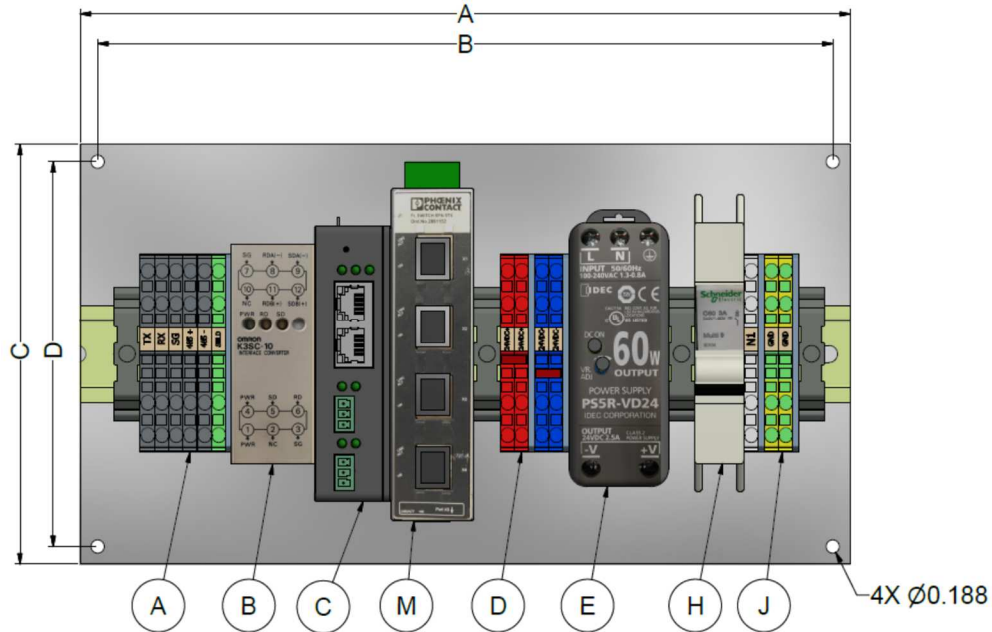
Kit on Plate	ProtoAir protocol converter (C)	Ethernet Switch (M)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KTxXXX-XSX-XXX			7.50"	7.00"	4.50"	4.00"
TS-KTxXXX-XXM-XXX	X		8.50"	8.00"	6.00"	5.50"
TS-KTxXXX-XBX-XXX	X	X	9.50"	9.00"	6.00"	5.50"

Kit Dimensions (continued)



Kit Dimensions (continued)

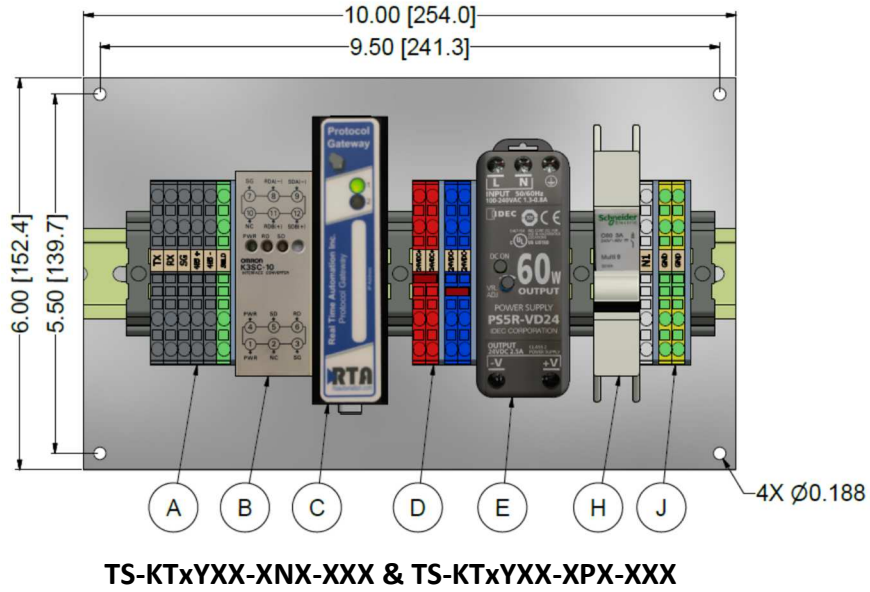
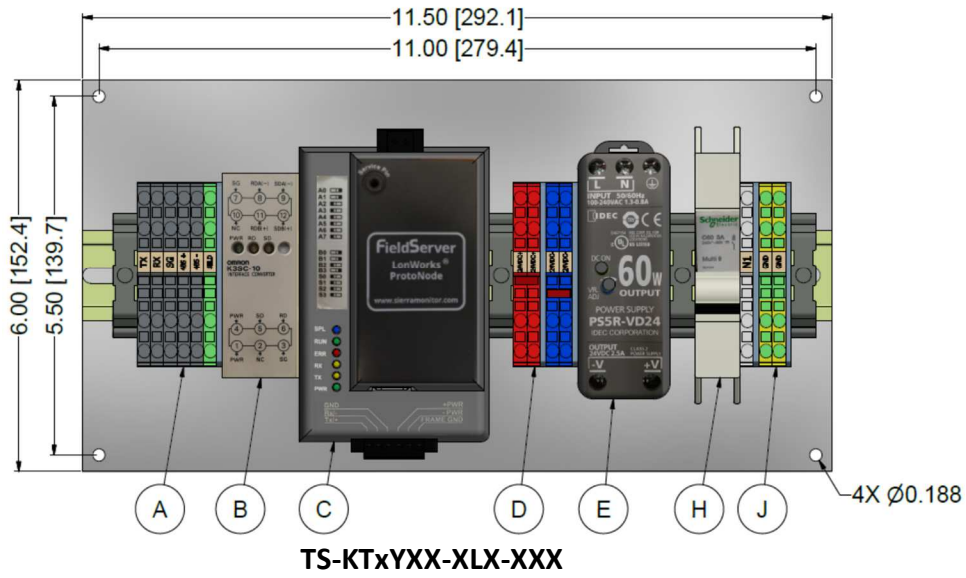
TS-KT_xYXX-XBX-XXXX



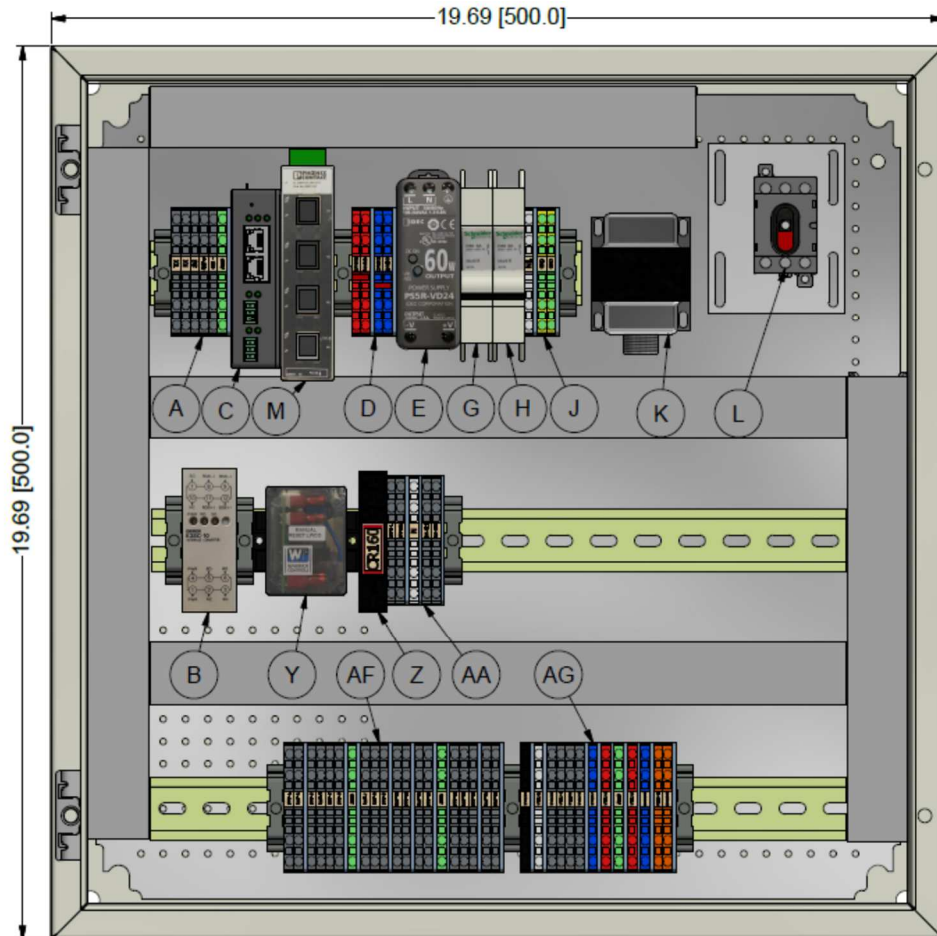
TS-KT_xYXX-XBX-XXX

Kit on Plate	ProtoAir protocol converter (C)	Ethernet Switch (M)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT _x YXX-XSX-XXX			8.50"	8.00"	4.50"	4.00"
TS-KT _x YXX-XXM-XXX	X		9.50"	9.00"	6.00"	5.50"
TS-KT _x YXX-XBX-XXX	X	X	11.00"	10.50"	6.00"	5.50"

Kit Dimensions (continued)



Kit Dimensions (continued)



TS-KT_xYXX-XB1-XY_x2

Options for Kit in Enclosure	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)
TS-KT _x YXX-XB1-X _{xx} W	X		
TS-KT _x YXX-XB1-X _{xx} L		X	
TS-KT _x YXX-XB1-XY _{xx}			X

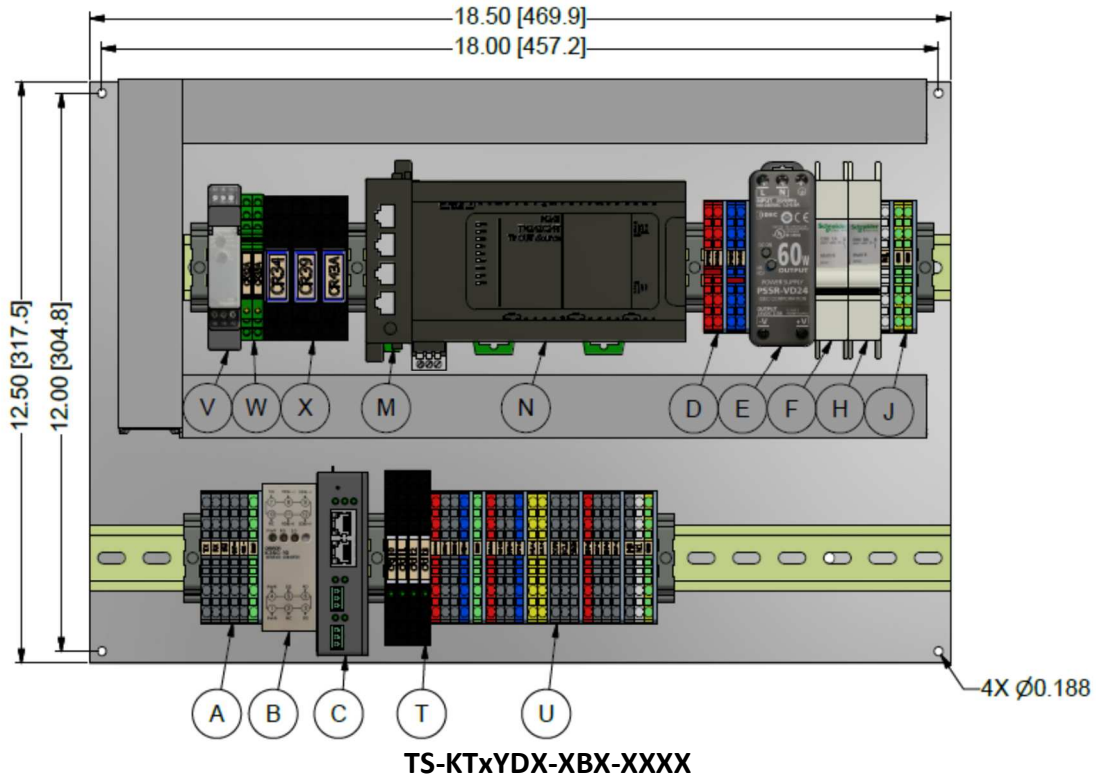
Notes:

16"x16" Enclosure used with (0-2) options

20"x20" Enclosure used with (3) options

Kit Dimensions (continued)

TS-KTxxDX-XxX-XXXX

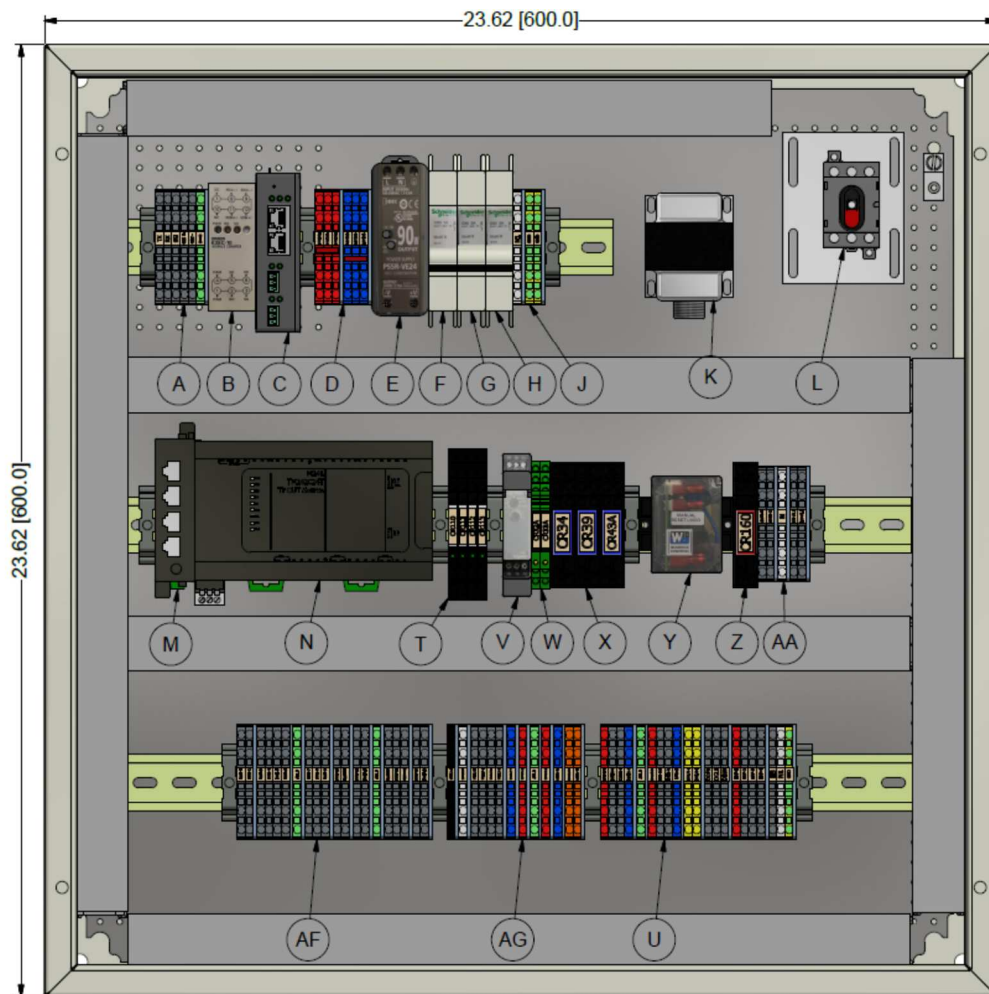


Notes:

Layout includes RS232 to RS485 converter used with TS-KTxxYxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYDX-XB1-XYx2

Options for Kit in Enclosure	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)
TS-KTxYDX-XB1-XxxW	X		
TS-KTxYDX-XB1-XxxL		X	
TS-KTxYDX-XB1-XYxx			X

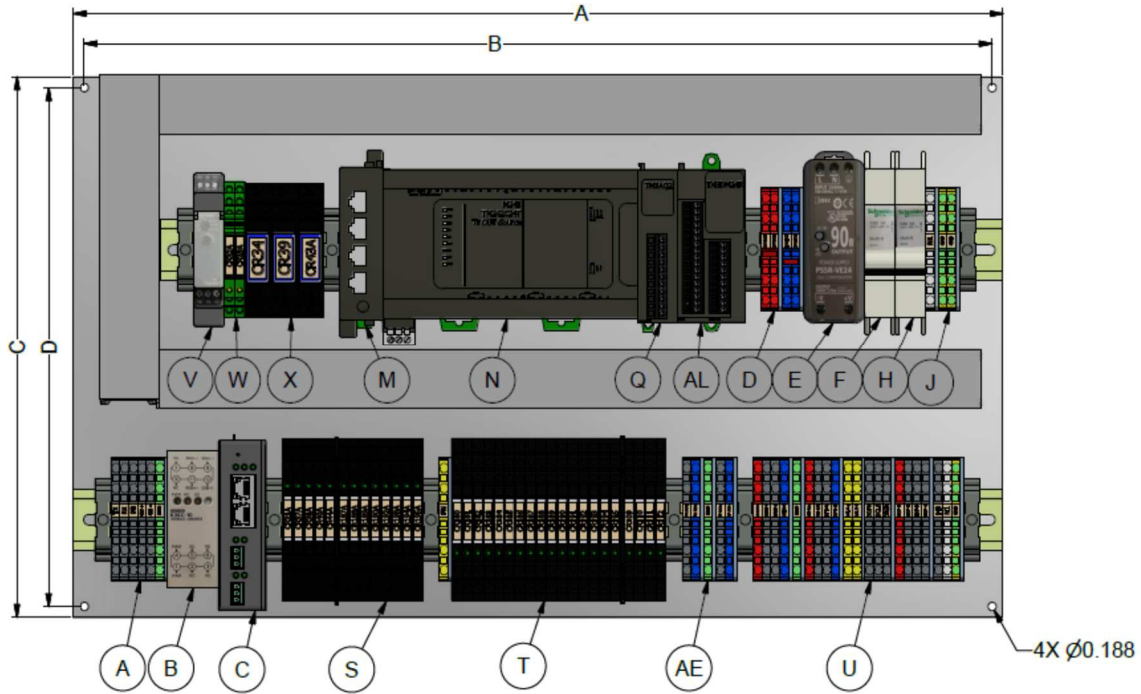
Notes:

20"x20" Enclosure used with (0-2) options

24"x24" Enclosure used with (3) options

Kit Dimensions (continued)

TS-KTxxxx-AxX-XXXX



TS-KTxD6-ABX-XXXX

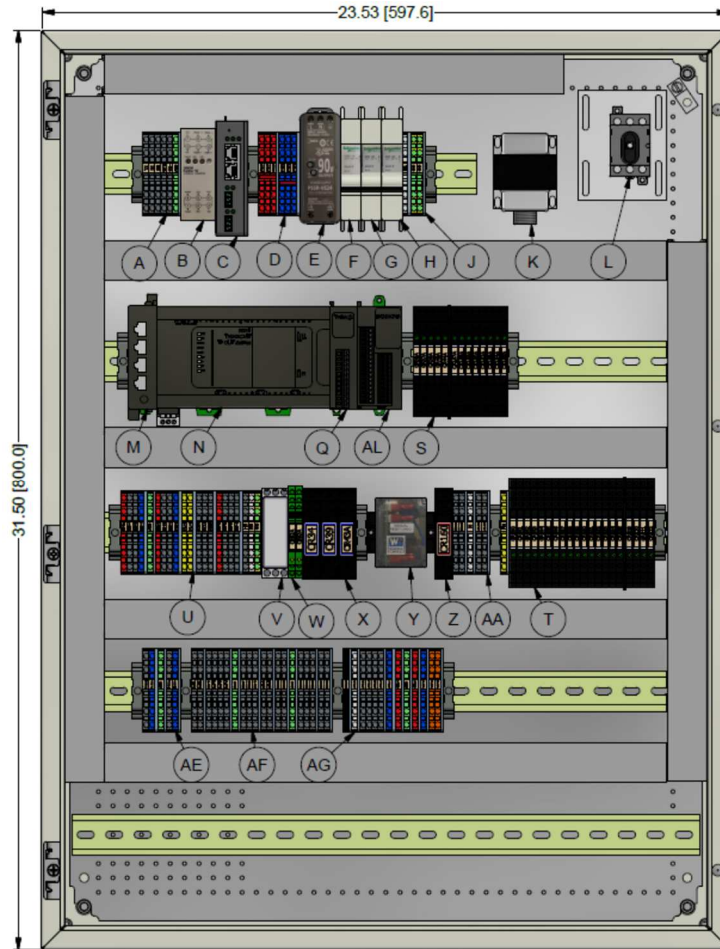
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT \mathbf{YXX} -AxX-XXXX				14.50"	14.00"	12.50"	12.00"
TS-KT \mathbf{YDX} -AxX-XXXX	X			18.50"	18.00"	12.50"	12.00"
TS-KT $\mathbf{YX3}$ -AxX-XXXX		X		15.50"	15.00"	12.50"	12.00"
TS-KT $\mathbf{YD3}$ -AxX-XXXX	X	X		19.50"	19.00"	12.50"	12.00"
TS-KT $\mathbf{YD6}$ -AxX-XXXX	X	X	X	21.50"	21.00"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KT \mathbf{Yxx} -xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-AB1-XYx2

Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-AB1-Xxxx	X					
TS-KTxYxx-AB1-XxxW		X				
TS-KTxYxx-AB1-XxxL			X			
TS-KTxYxx-AB1-XYxx				X		
TS-KTxYx(3/4/5)-AB1-Xxxx					X	
TS-KTxYx6-AB1-Xxxx					X	X

Notes:

16"x16" Enclosure used with no options without Lonworks

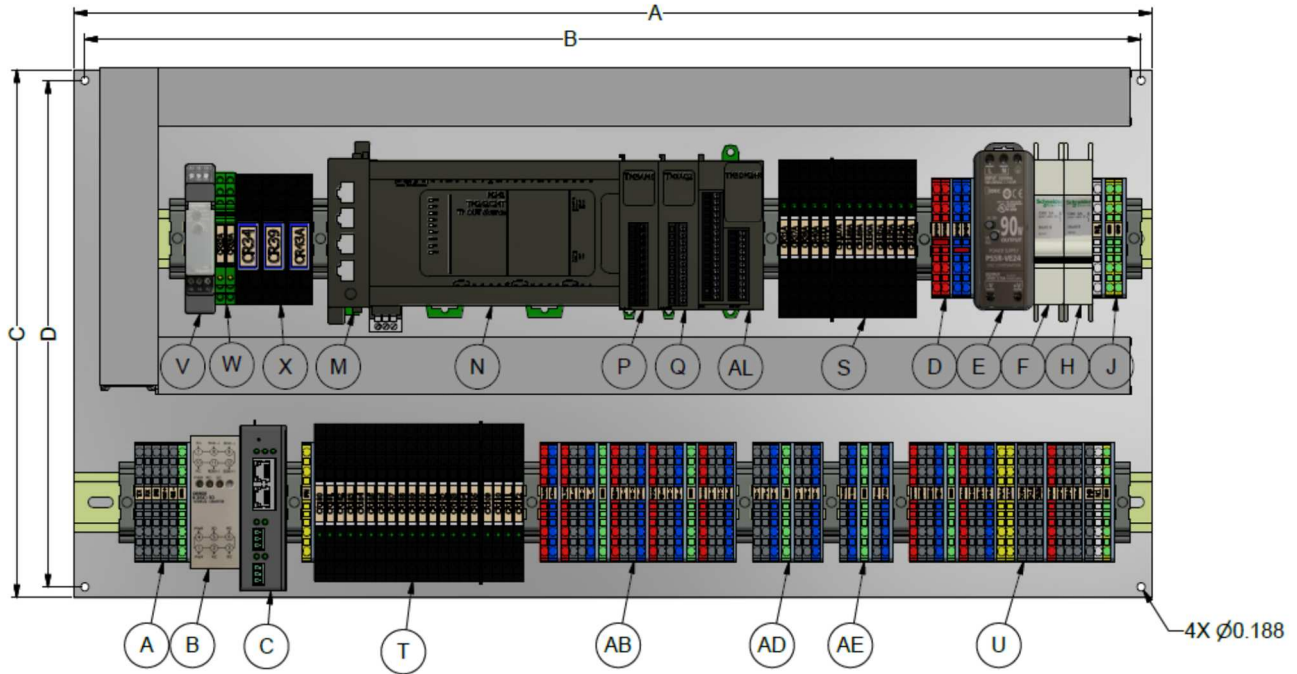
20"x20" Enclosure used with (1-3) options without Lonworks or (0-2) options with Lonworks

24"x24" Enclosure used with (4-5) or more options without Lonworks or (3-5) or more options with Lonworks

32"x24" Enclosure used with 6 options

Kit Dimensions (continued)

TS-KTxxxx-BxX-XXXX



TS-KT_xYD6-BB_x-XXXX

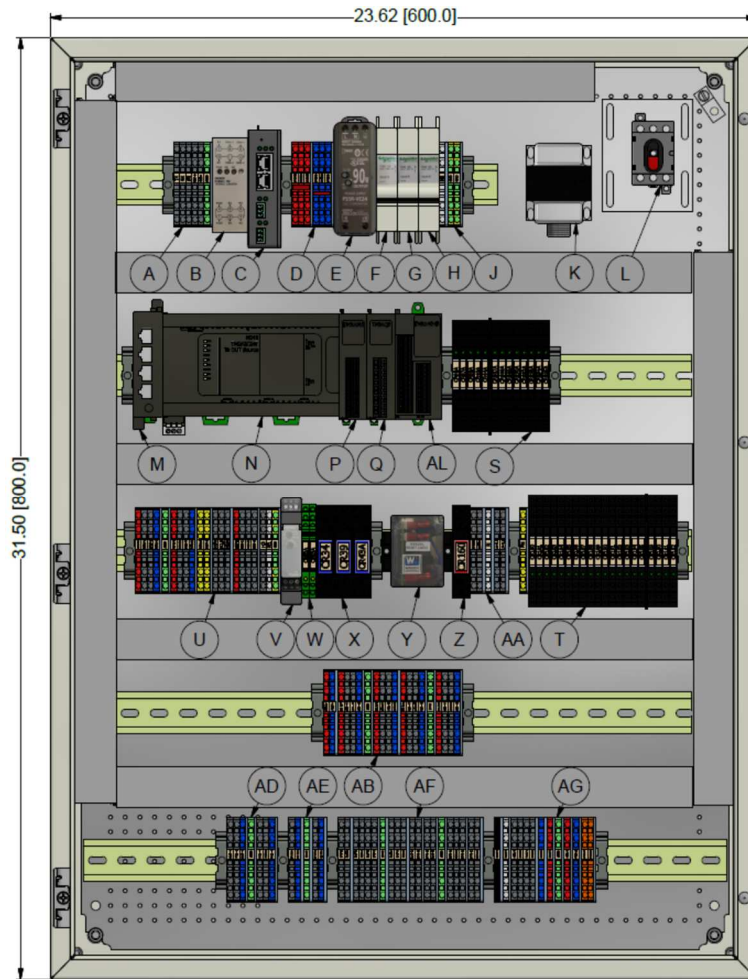
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT _x Y _{XX} -B _x X-XXXX				18.50"	18.00"	12.50"	12.00"
TS-KT _x Y _{DX} -B _x X-XXXX	X			22.50"	22.00"	12.50"	12.00"
TS-KT _x Y _{X3} -B _x X-XXXX		X		19.50"	19.00"	12.50"	12.00"
TS-KT _x Y _{D3} -B _x X-XXXX	X	X		23.50"	23.00"	12.50"	12.00"
TS-KT _x Y _{D6} -B _x X-XXXX	X	X	X	25.50"	25.00"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KT_xY_{xx}-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KT_{xxxx}-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-BB1-XYx2

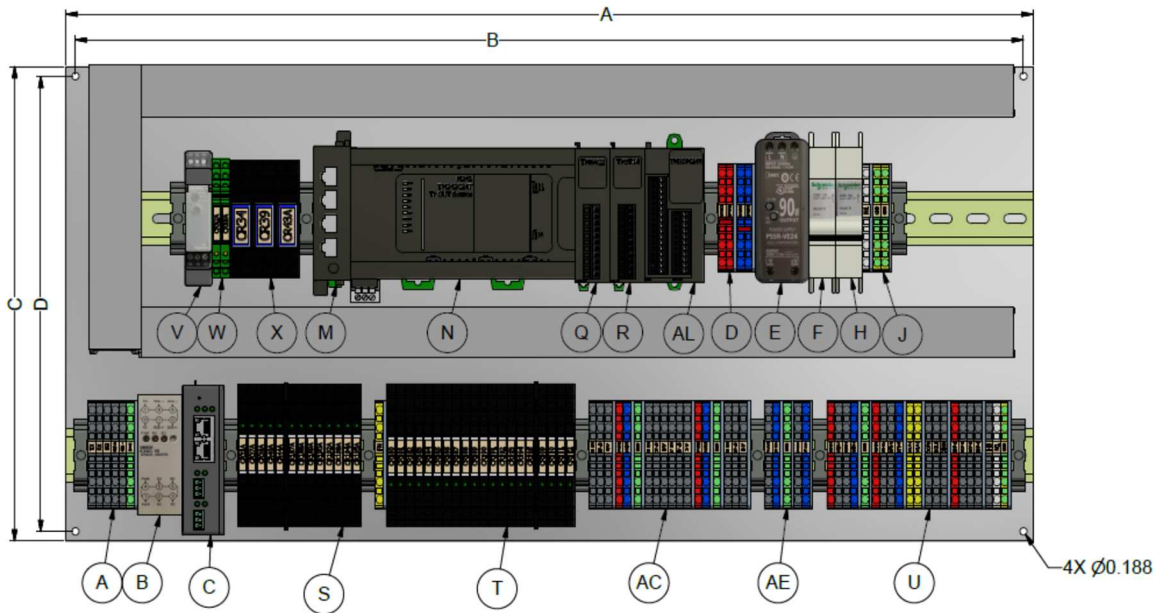
Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-BB1-Xxxx	X					
TS-KTxYxx-BB1-XxxW		X				
TS-KTxYxx-BB1-XxxL			X			
TS-KTxYxx-BB1-XYxx				X		
TS-KTxYx(3/4/5)-BB1-Xxxx					X	
TS-KTxYx6-BB1-Xxxx					X	X

Notes:

- 20"x20" Enclosure used with (0-1) options
- 24"x24" Enclosure used with (2-3) options
- 32"x24" Enclosure used with (4) or more options

Kit Dimensions (continued)

TS-KTxxxx-CxX-XXXX



TS-KTxD6-CBX-XXXX

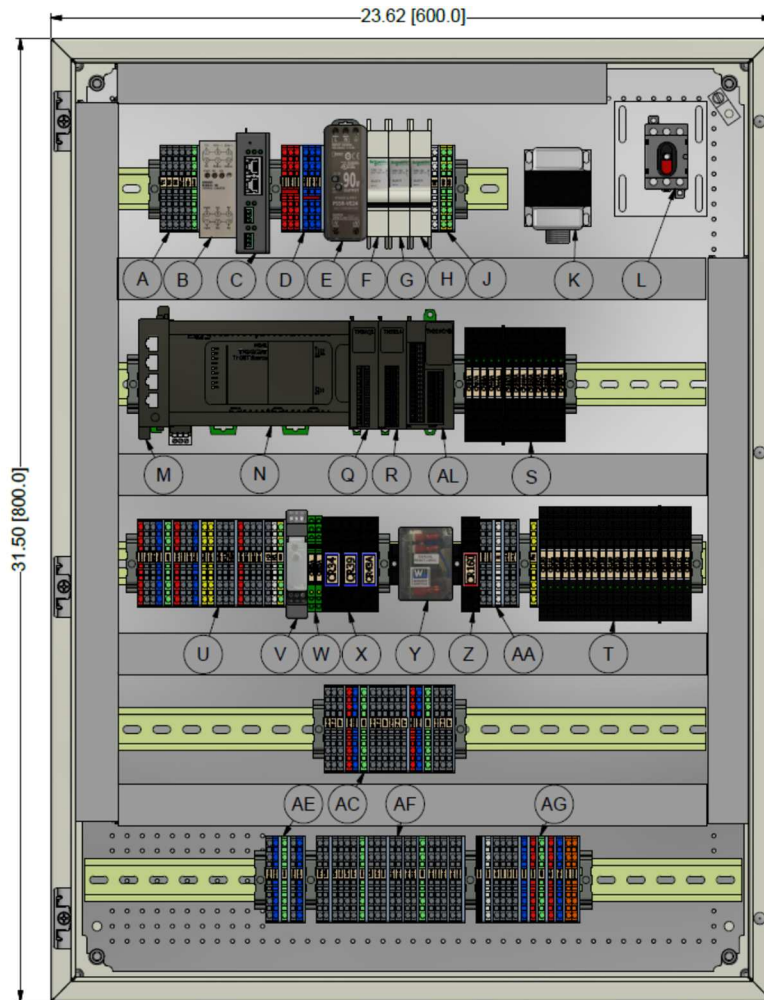
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT YXX -CxX-XXXX				17.00"	16.50"	12.50"	12.00"
TS-KT YDX -CxX-XXXX	X			21.50"	21.00"	12.50"	12.00"
TS-KT YX3 -CxX-XXXX		X		17.50"	17.00"	12.50"	12.00"
TS-KT YD3 -CxX-XXXX	X	X		22.50"	22.00"	12.50"	12.00"
TS-KT YD6 -CxX-XXXX	X	X	X	25.50"	25.00"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KT Yxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KT xxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



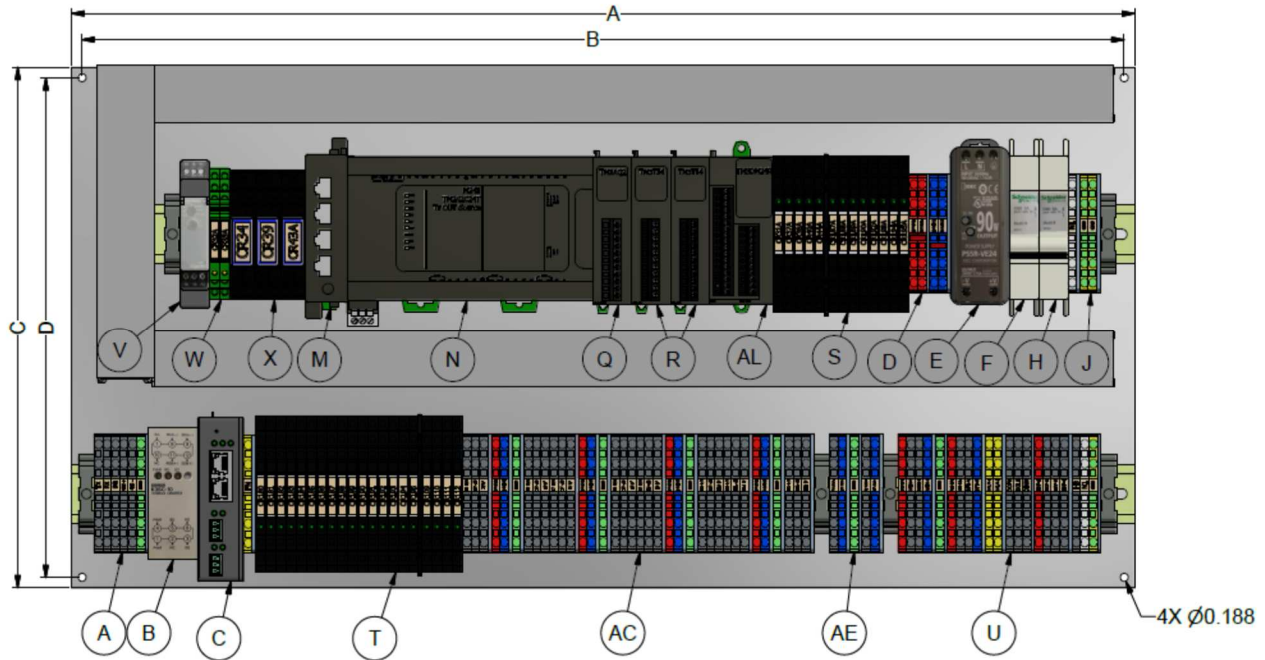
TS-KTxYD6-CB1-XYx2

Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-CB1-Xxxx	X					
TS-KTxYxx-CB1-XxxW		X				
TS-KTxYxx-CB1-XxxL			X			
TS-KTxYxx-CB1-XYxx				X		
TS-KTxYx(3/4/5)-CB1-Xxxx					X	
TS-KTxYx6-CB1-Xxxx					X	X

Notes:

- 20"x20" Enclosure used with (0-1) options
- 24"x24" Enclosure used with (2-3) options
- 32"x24" Enclosure used with (4) or more options

Kit Dimensions (continued)
TS-KTxxxx-DxX-XXXX



TS-KTxYD6-DBX-XXXX

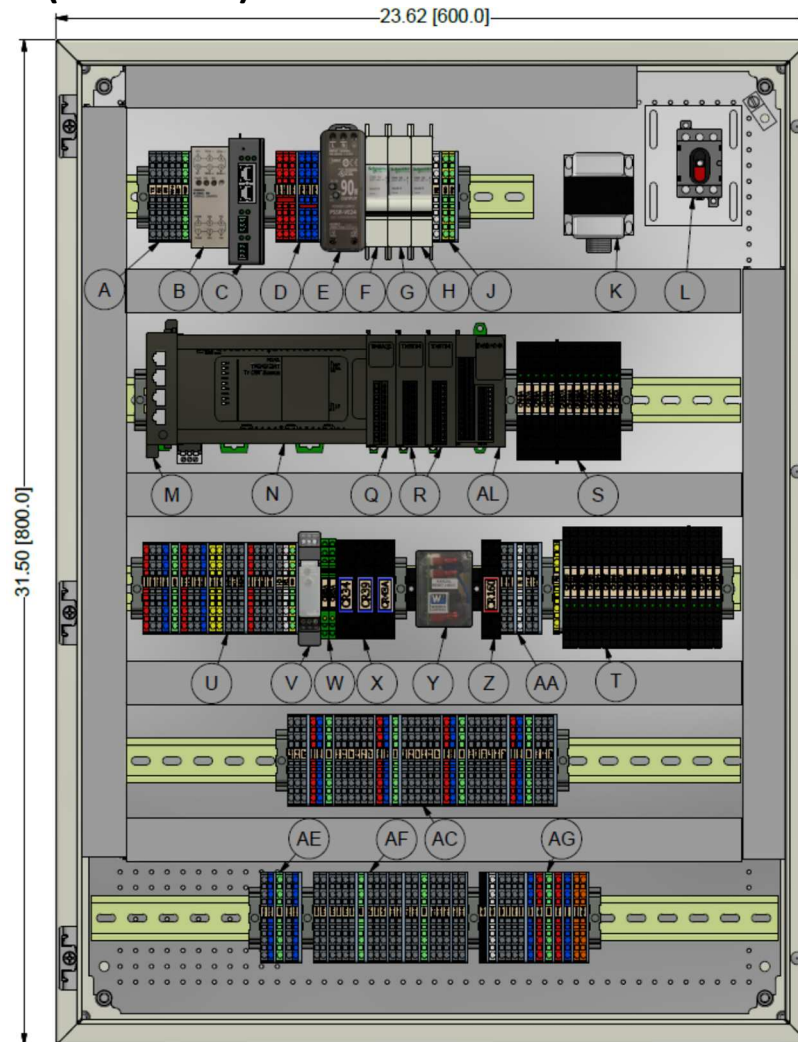
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KTxYXX-DxX-XXXX				19.50"	19.00"	12.50"	12.00"
TS-KTxYDX-DxX-XXXX	X			24.00"	23.50"	12.50"	12.00"
TS-KTxYX3-DxX-XXXX		X		20.00"	19.50"	12.50"	12.00"
TS-KTxYD3-DxX-XXXX	X	X		25.00"	24.50"	12.50"	12.00"
TS-KTxYD6-DxX-XXXX	X	X	X	25.50"	25.00"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KTxYxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-DB1-XYx2

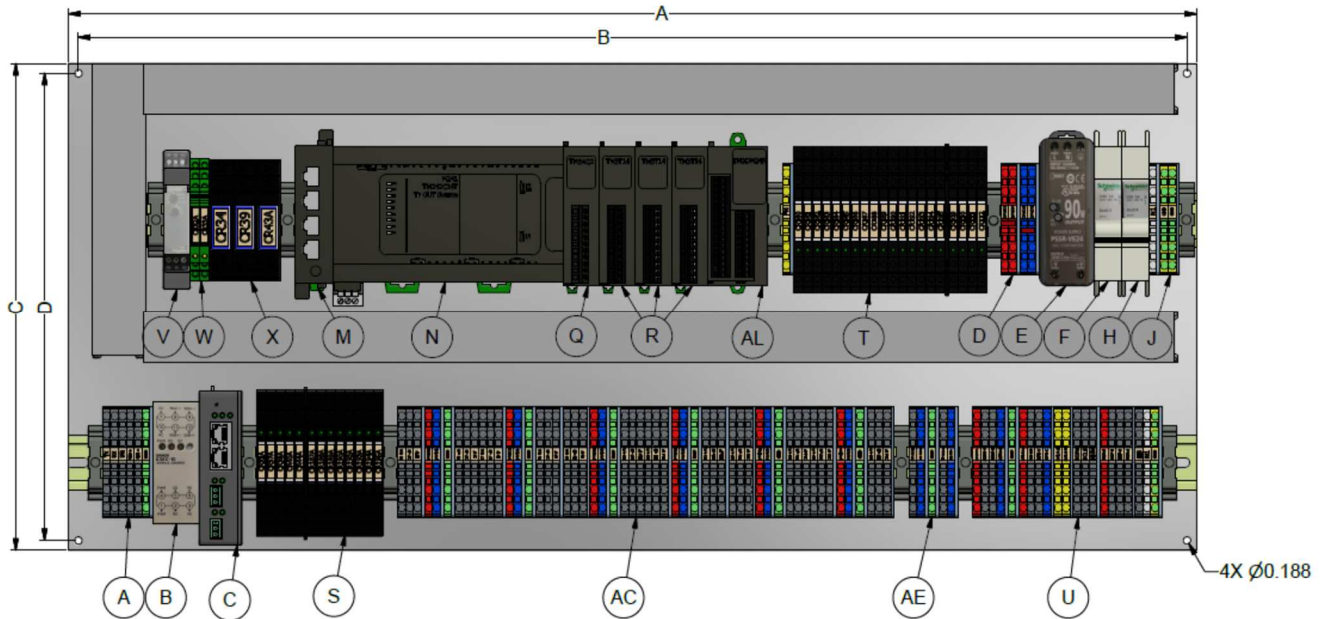
Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-DB1-Xxxx	X					
TS-KTxYxx-DB1-XxxW		X				
TS-KTxYxx-DB1-XxxL			X			
TS-KTxYxx-DB1-XYxx				X		
TS-KTxYx(3/4/5)-DB1-Xxxx					X	
TS-KTxYx6-DB1-Xxxx					X	X

Notes:

- 20"x20" Enclosure used with no options
- 24"x24" Enclosure used with (1-2) options
- 32"x24" Enclosure used with (3) or more options

Kit Dimensions (continued)

TS-KTxxxx-ExX-XXXX



TS-KTxD6-EBX-XXXX

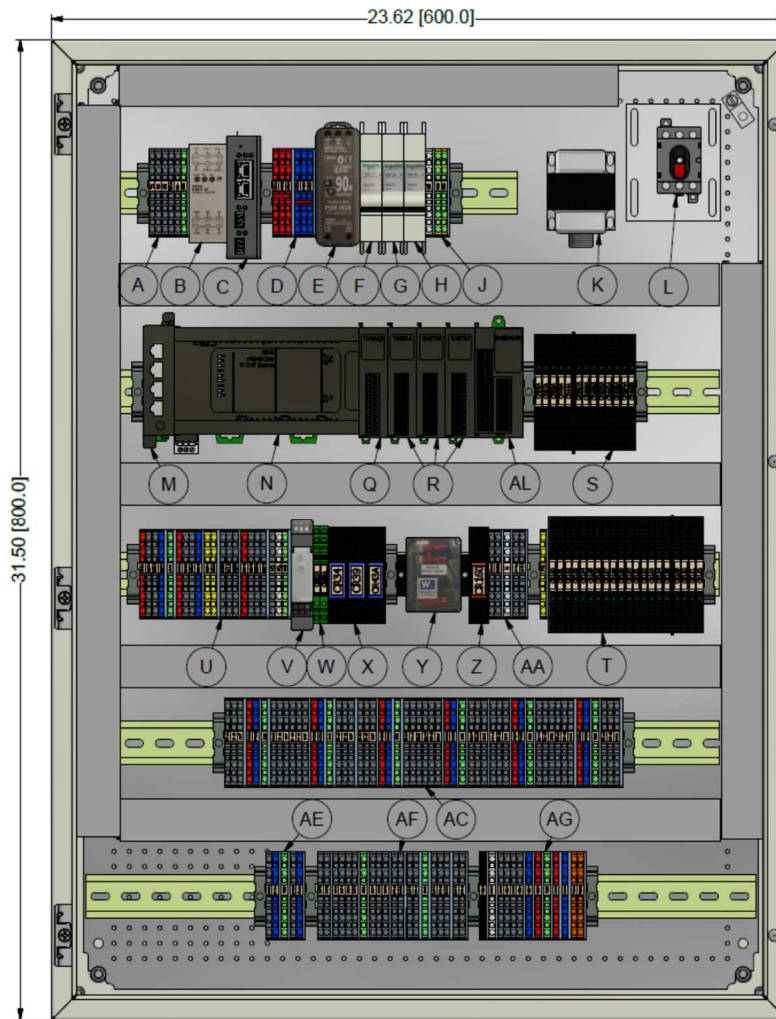
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT YXX -ExX-XXXX				22.00"	21.50"	12.50"	12.00"
TS-KT YDX -ExX-XXXX	X			27.00"	26.50"	12.50"	12.00"
TS-KT YX3 -ExX-XXXX		X		23.00"	22.50"	12.50"	12.00"
TS-KT YD3 -ExX-XXXX	X	X		27.50"	27.00"	12.50"	12.00"
TS-KT YD6 -ExX-XXXX	X	X	X	29.00"	28.50"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KT Yxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KT xxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-EB1-XYx2

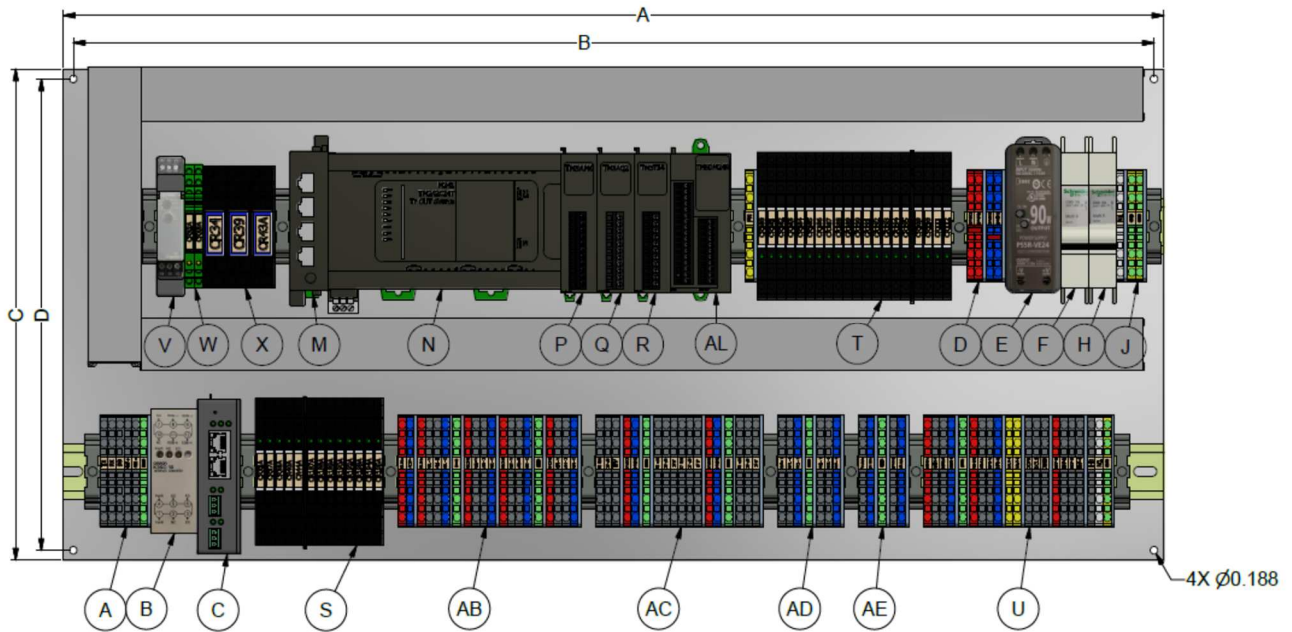
Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-EB1-Xxxx	X					
TS-KTxYxx-EB1-XxxW		X				
TS-KTxYxx-EB1-XxxL			X			
TS-KTxYxx-EB1-XYxx				X		
TS-KTxYx(3/4/5)-EB1-Xxxx					X	
TS-KTxYx6-EB1-Xxxx					X	X

Notes:

- 20"x20" Enclosure used with no options
- 24"x24" Enclosure used with (1) option
- 32"x24" Enclosure used with (2) or more options

Kit Dimensions (continued)

TS-KTxxxx-FxX-XXXX



TS-KTxYD6-FBX-XXXX

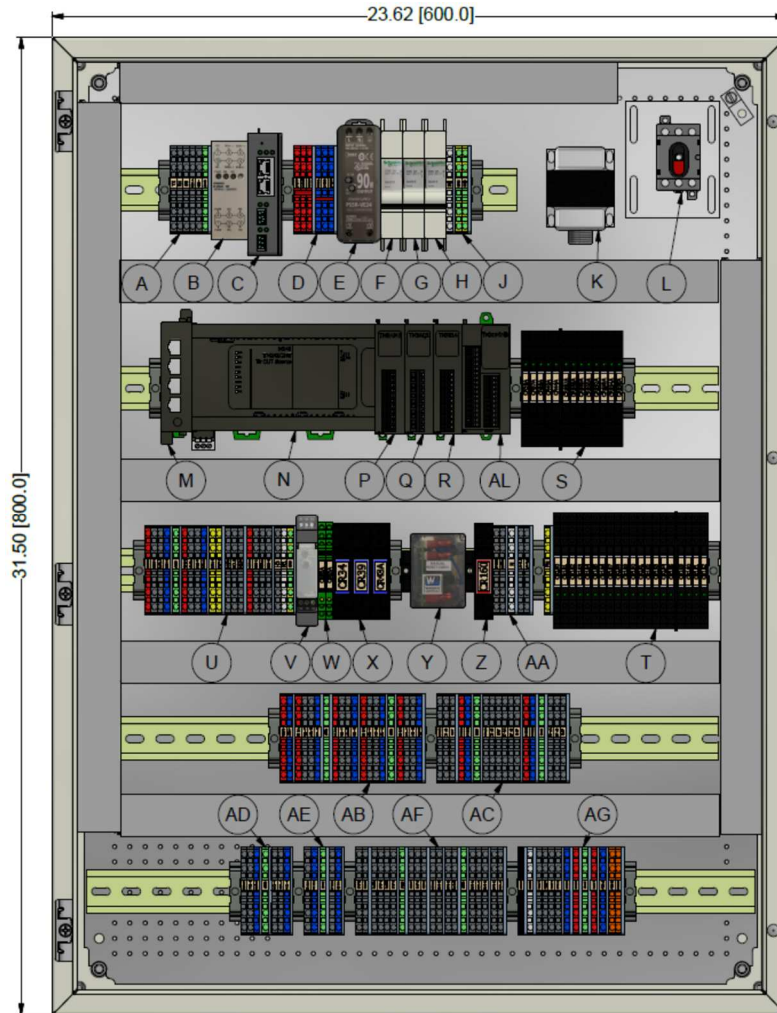
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KTxYXX-FxX-XXXX				20.50"	20.00"	12.50"	12.00"
TS-KTxYDX-FxX-XXXX	X			25.50"	25.00"	12.50"	12.00"
TS-KTxYX3-FxX-XXXX		X		21.50"	21.00"	12.50"	12.00"
TS-KTxYD3-FxX-XXXX	X	X		26.50"	26.00"	12.50"	12.00"
TS-KTxYD6-FxX-XXXX	X	X	X	28.00"	27.50"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KTxYxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-FB1-XYx2

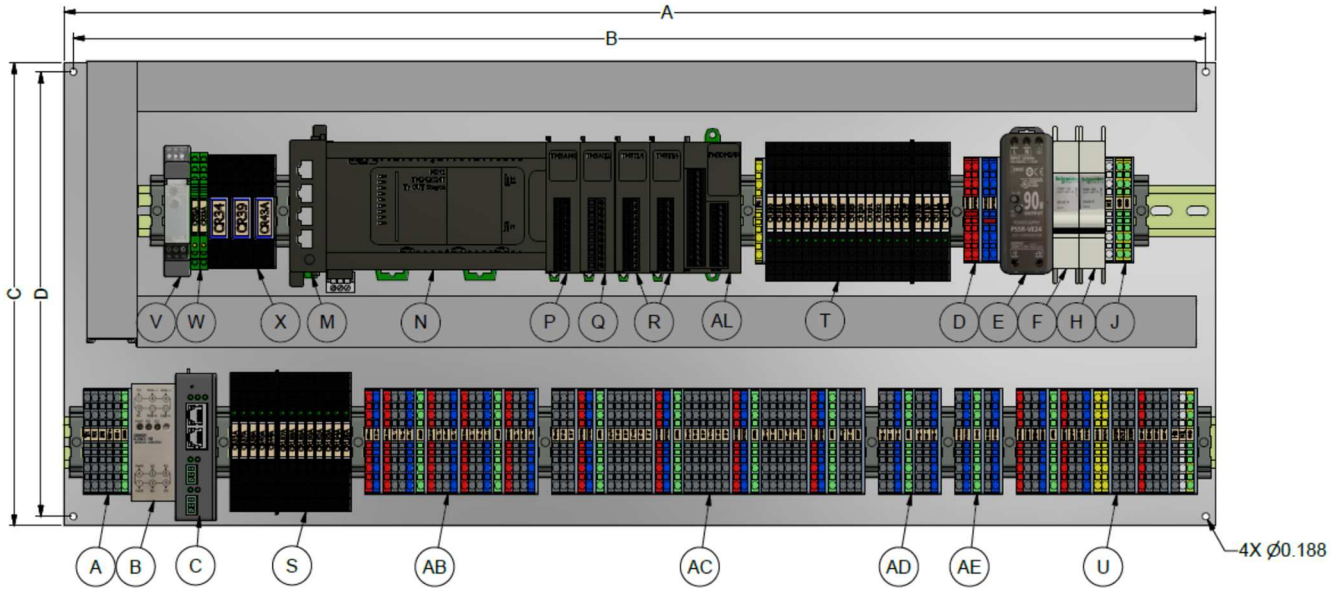
Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-FB1-Xxxx	X					
TS-KTxYxx-FB1-XxxW		X				
TS-KTxYxx-FB1-XxxL			X			
TS-KTxYxx-FB1-XYxx				X		
TS-KTxYx(3/4/5)-FB1-Xxxx					X	
					X	X

Notes:

- 20"x20" Enclosure used with no options
- 24"x24" Enclosure used with (1-2) options
- 32"x24" Enclosure used with (3) or more options

Kit Dimensions (continued)

TS-KTxxxx-GxX-XXXX



TS-KTxD6-GBX-XXXX

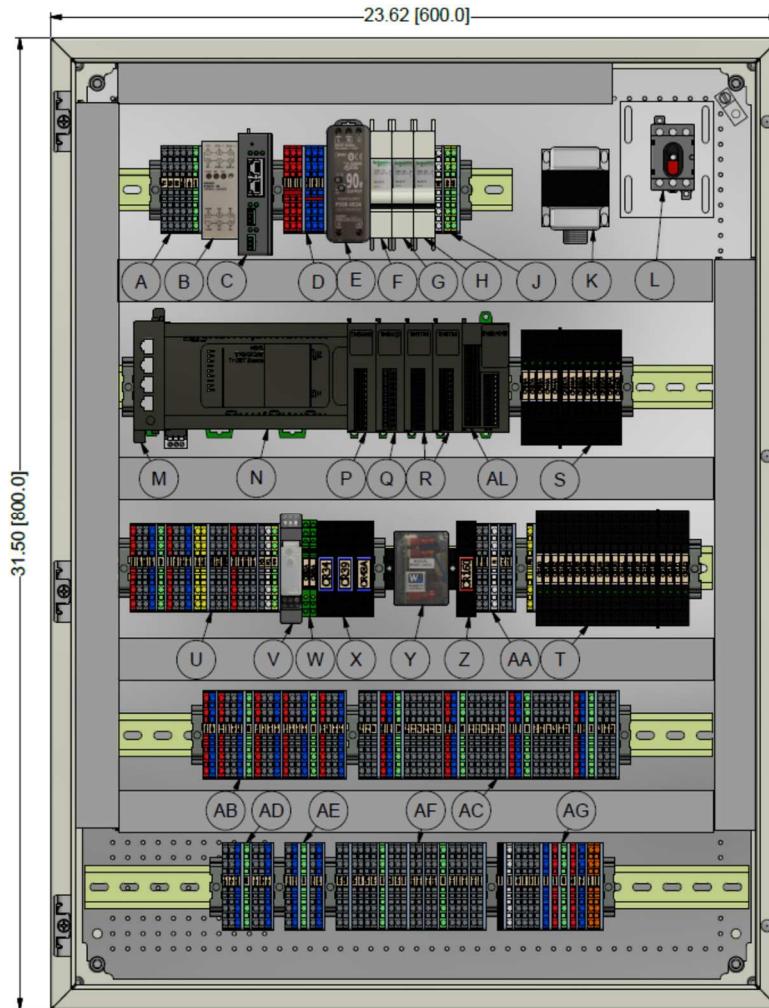
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KT \times YXX-G \times X-XXXX				23.00"	22.50"	12.50"	12.00"
TS-KT \times YDX-G \times X-XXXX	X			28.50"	28.00"	12.50"	12.00"
TS-KT \times YX3-G \times X-XXXX		X		24.00"	23.50"	12.50"	12.00"
TS-KT \times YD3-G \times X-XXXX	X	X		29.50"	29.00"	12.50"	12.00"
TS-KT \times YD6-G \times X-XXXX	X	X	X	31.00"	30.50"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KT \times Yxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD6-GB1-XYx2

Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-GB1-Xxxx	X					
TS-KTxYxx-GB1-XxxW		X				
TS-KTxYxx-GB1-XxxL			X			
TS-KTxYxx-GB1-XYxx				X		
TS-KTxYx(3/4/5)-GB1-Xxxx					X	
TS-KTxYx6-GB1-Xxxx					X	X

Notes:

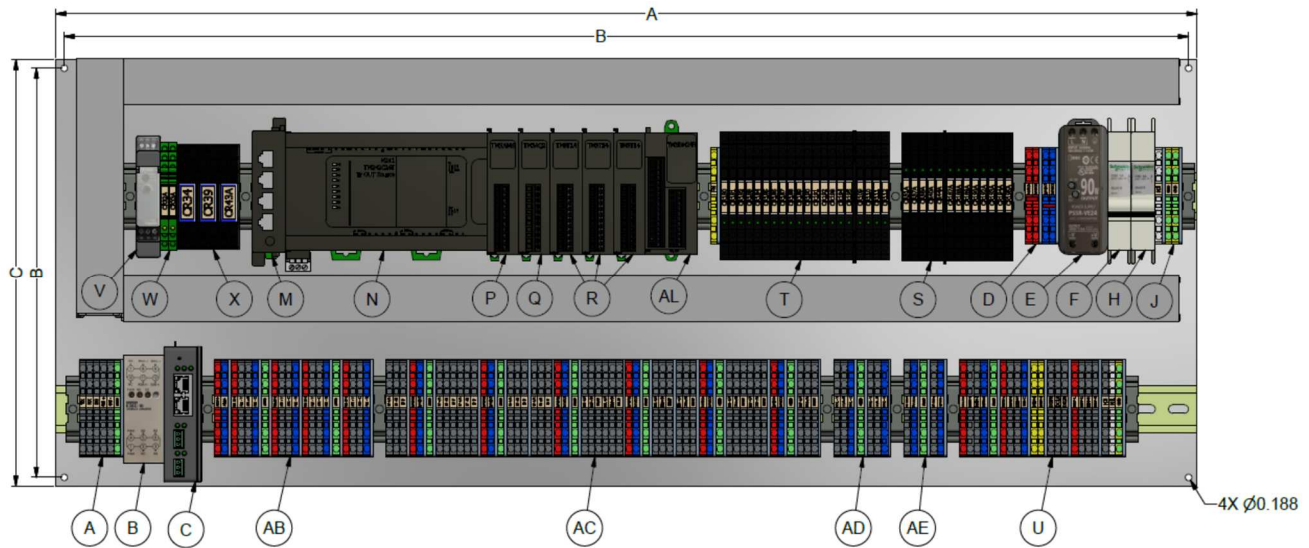
20"x20" Enclosure used with no options without Lonworks

24"x24" Enclosure used with (1) option without Lonworks or (0-1) options with Lonworks

32"x24" Enclosure used with (2) or more options

Kit Dimensions (continued)

TS-KTxxxx-HxX-XXXX



TS-KTxYD6-HBX-XXXX

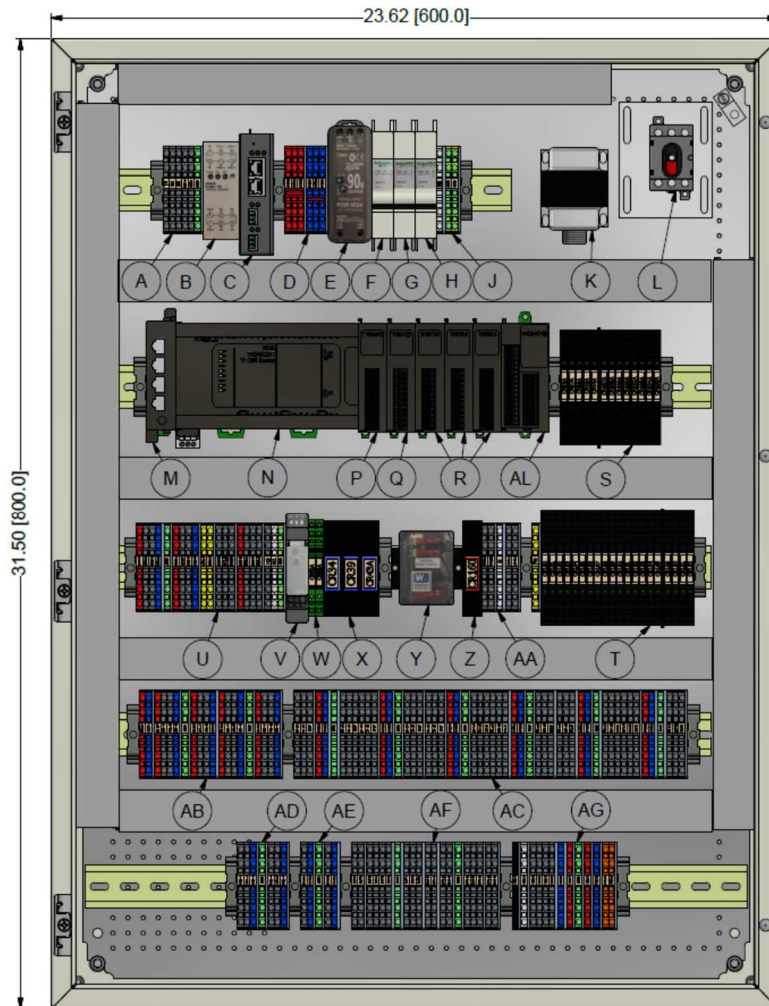
Options for Kit on Plate	Draft Control Components (F, U, V, W, X)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)	Dim "A"	Dim "B"	Dim "C"	Dim "D"
TS-KTxYXX-HxX-XXXX				26.00"	25.50"	12.50"	12.00"
TS-KTxYDX-HxX-XXXX	X			31.00"	30.50"	12.50"	12.00"
TS-KTxYX3-HxX-XXXX		X		27.50"	27.00"	12.50"	12.00"
TS-KTxYD3-HxX-XXXX	X	X		32.00"	31.50"	12.50"	12.00"
TS-KTxYD6-HxX-XXXX	X	X	X	33.50"	33.00"	12.50"	12.00"

Notes:

Layout includes RS232 to RS485 converter used with TS-KTxYxx-xxx-xxxx (Item B)

Layout includes ProtoAir wireless gateway used with TS-KTxxxx-x(B/M)x-xxxx (Item C)

Kit Dimensions (continued)



TS-KTxYD3-HB1-XYx2

Options for Kit in Enclosure	Draft Control Components (F, U, V, W, X)	Water Level Control Components (G, K, AG)	Load Control Components (G, AF)	Warrick Relay Components (Y, Z, AA)	PLC Output Components (Q, AE)	Additional Digital Inputs and Outputs (AL)
TS-KTxYDx-HB1-Xxxx	X					
TS-KTxYxx-HB1-XxxW		X				
TS-KTxYxx-HB1-XxxL			X			
TS-KTxYxx-HB1-XYxx				X		
TS-KTxYx(3/4/5)-HB1-Xxxx					X	
TS-KTxYx6-HB1-Xxxx					X	X

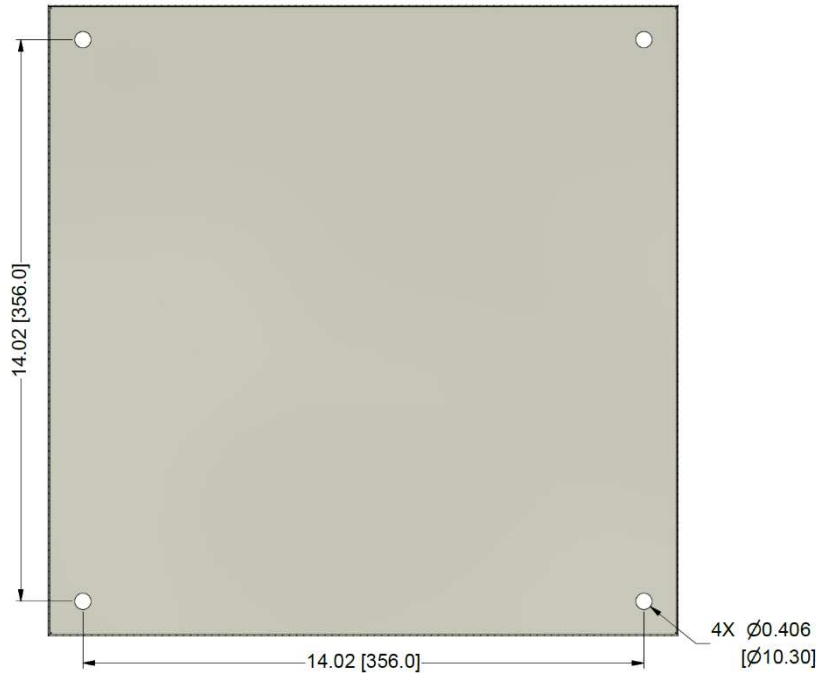
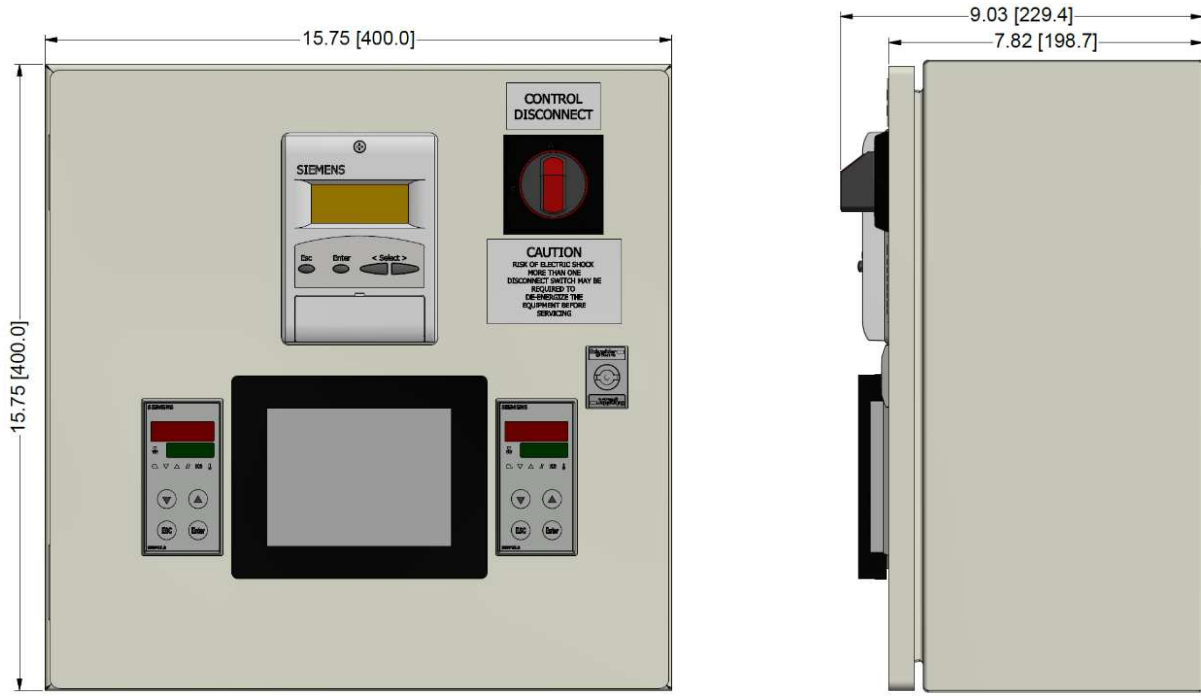
Notes:

24"x24" Enclosure used with no options

32"x24" Enclosure used with (1) or more options

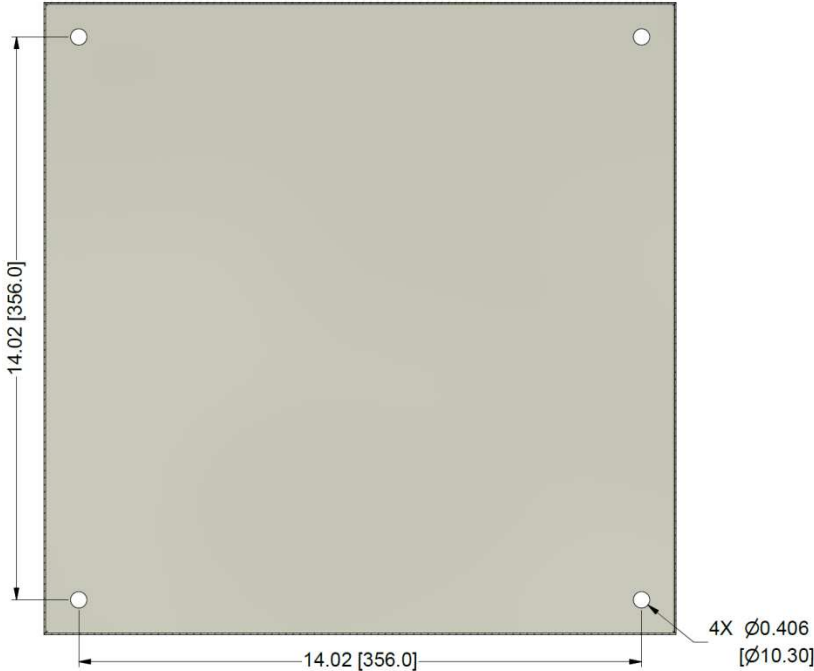
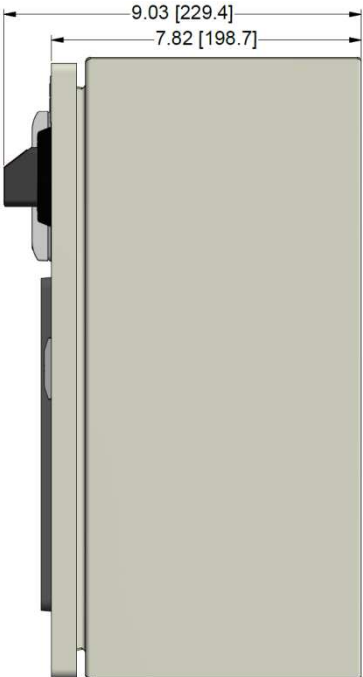
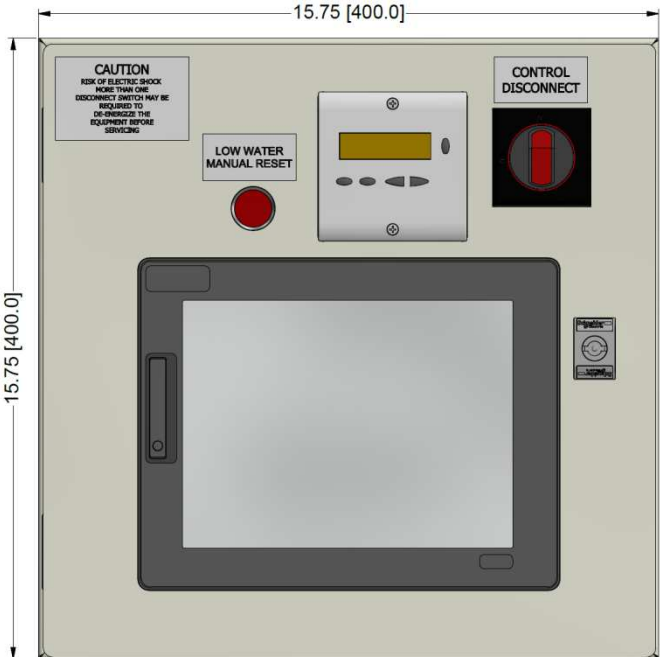
16"X 16" X 8" Enclosure Dimensions

TS-KT6xxx-xx1-XX52



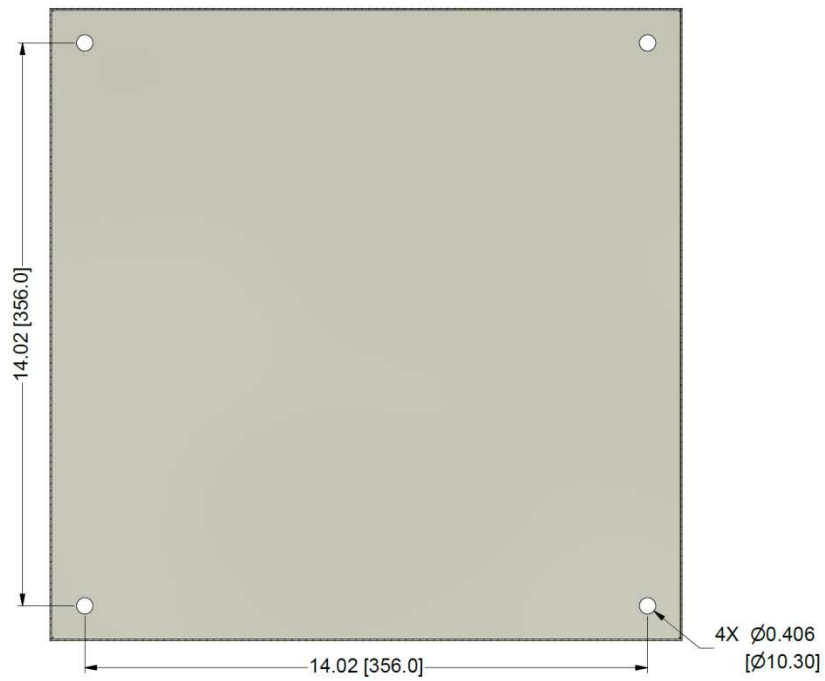
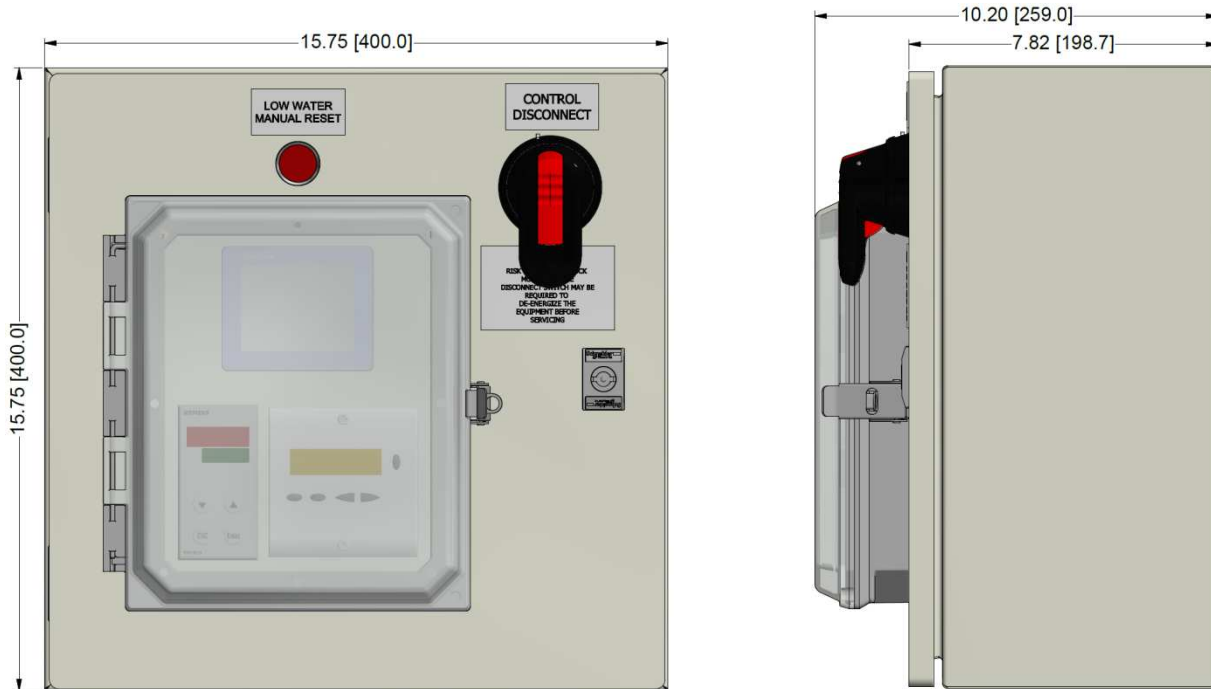
16"X 16" X 8" Enclosure Dimensions (continued)

TS-KT0xxx-xx1-XY3X



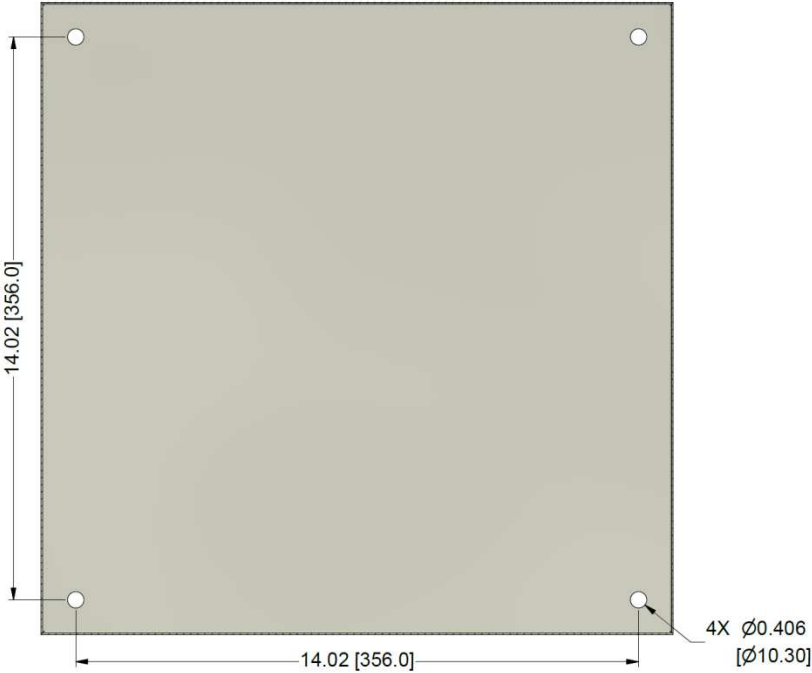
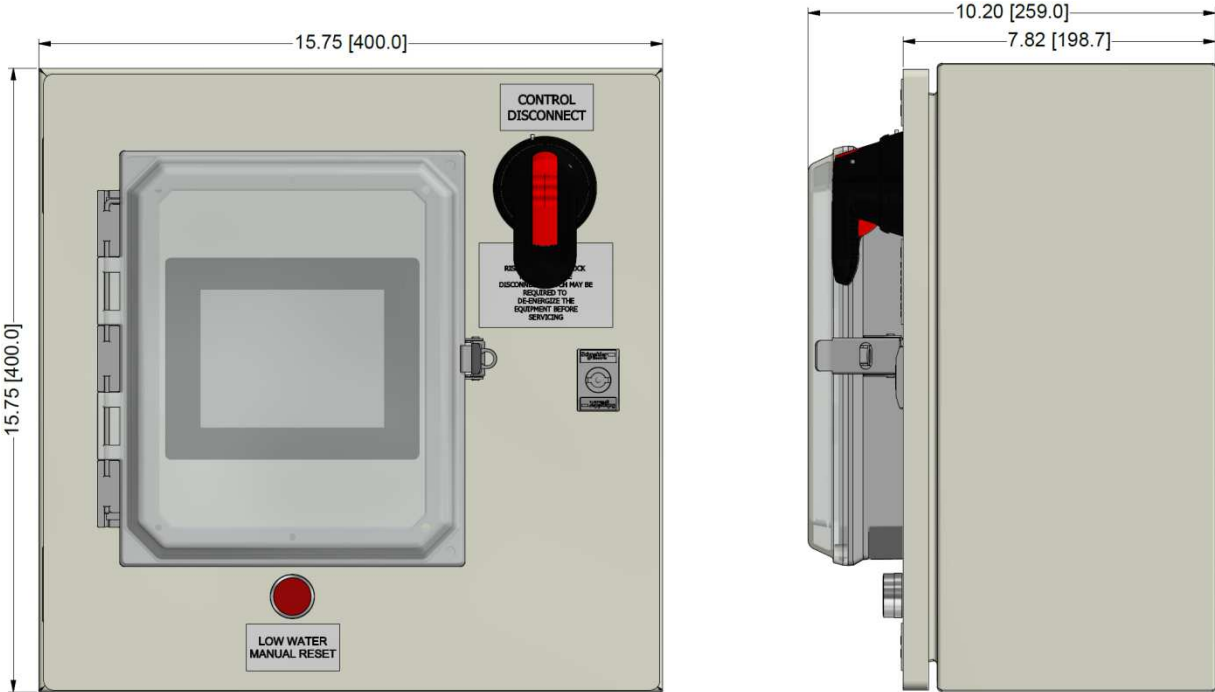
16"X 16" X 8" Enclosure Dimensions (continued)

TS-KT3xxx-xx2-XY3(L/W)



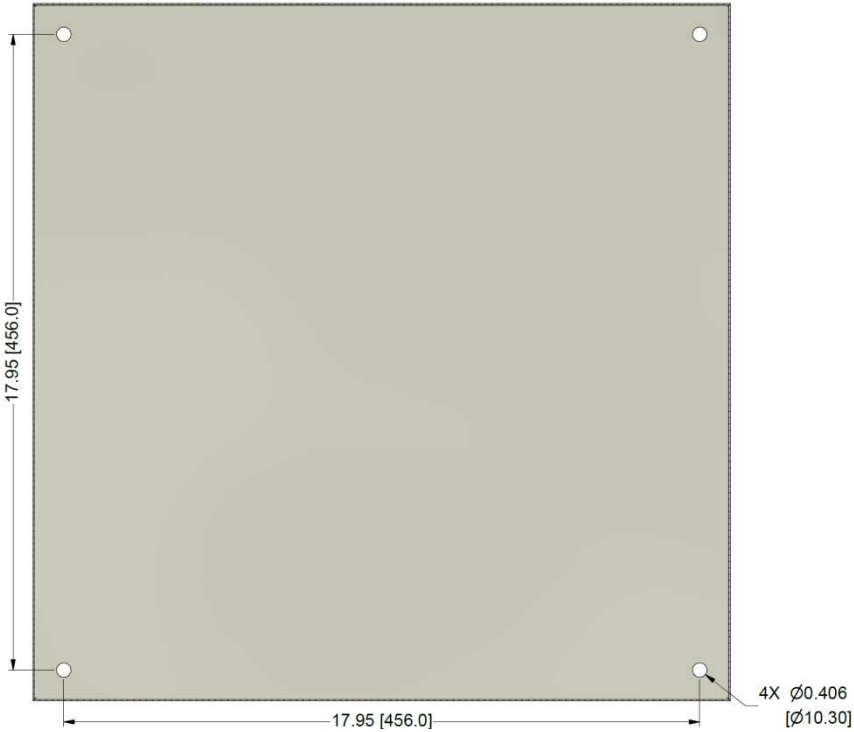
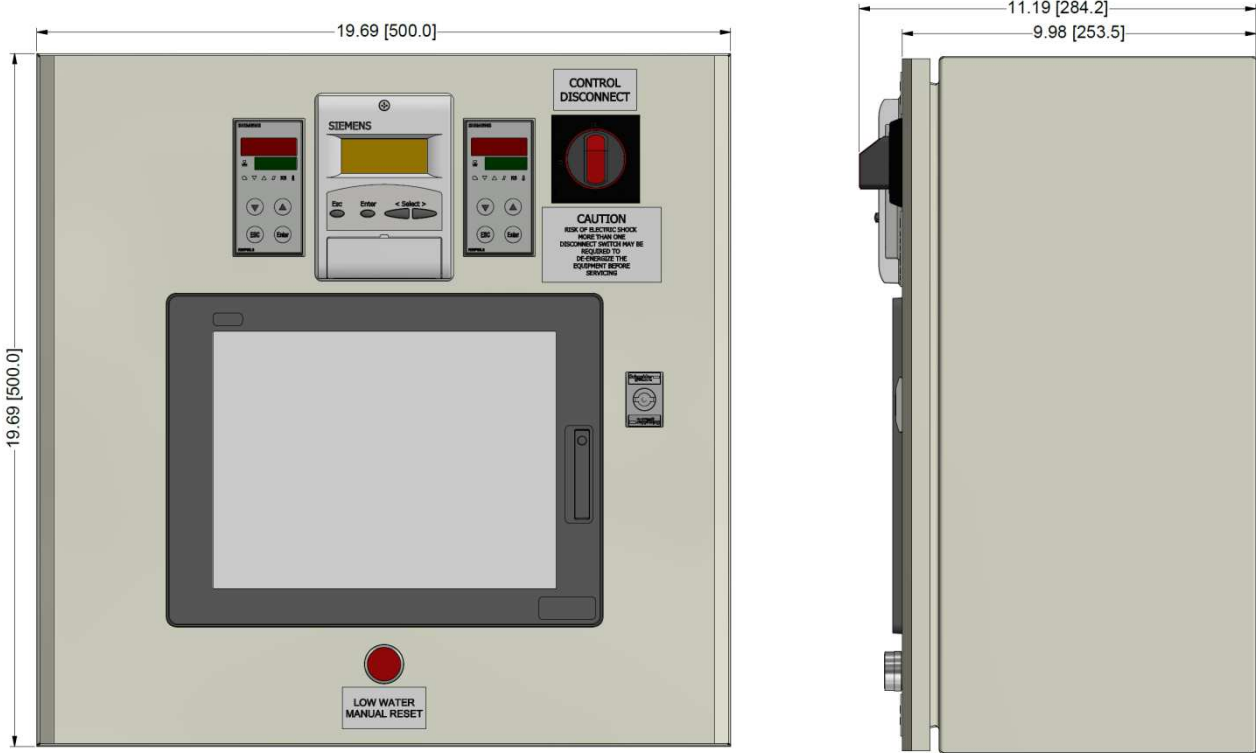
16"X 16" X 8" Enclosure Dimensions (continued)

TS-KT6xxx-xx2-XXXX



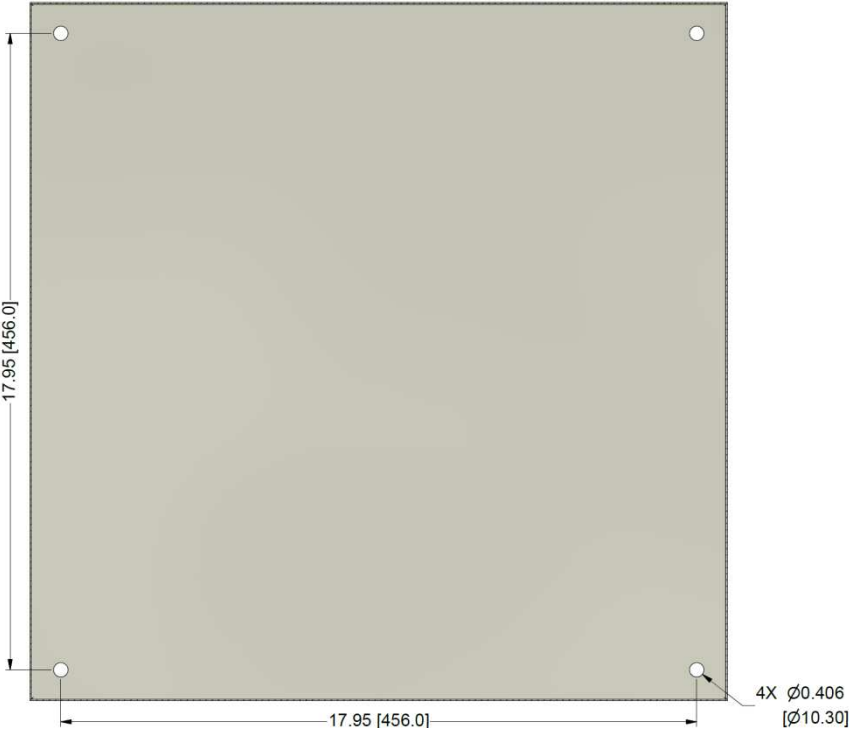
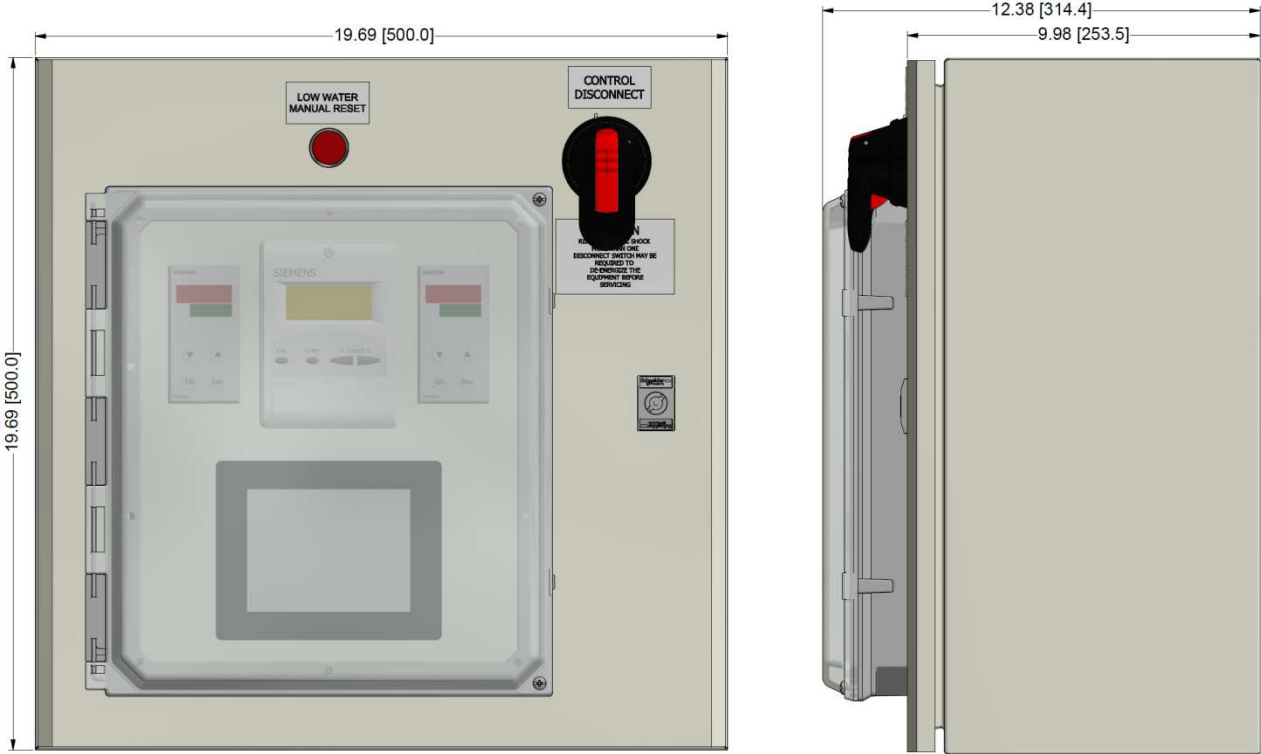
20"X 20" X 10" Enclosure Dimensions (continued)

TS-KT2xxx-xx1-XY52



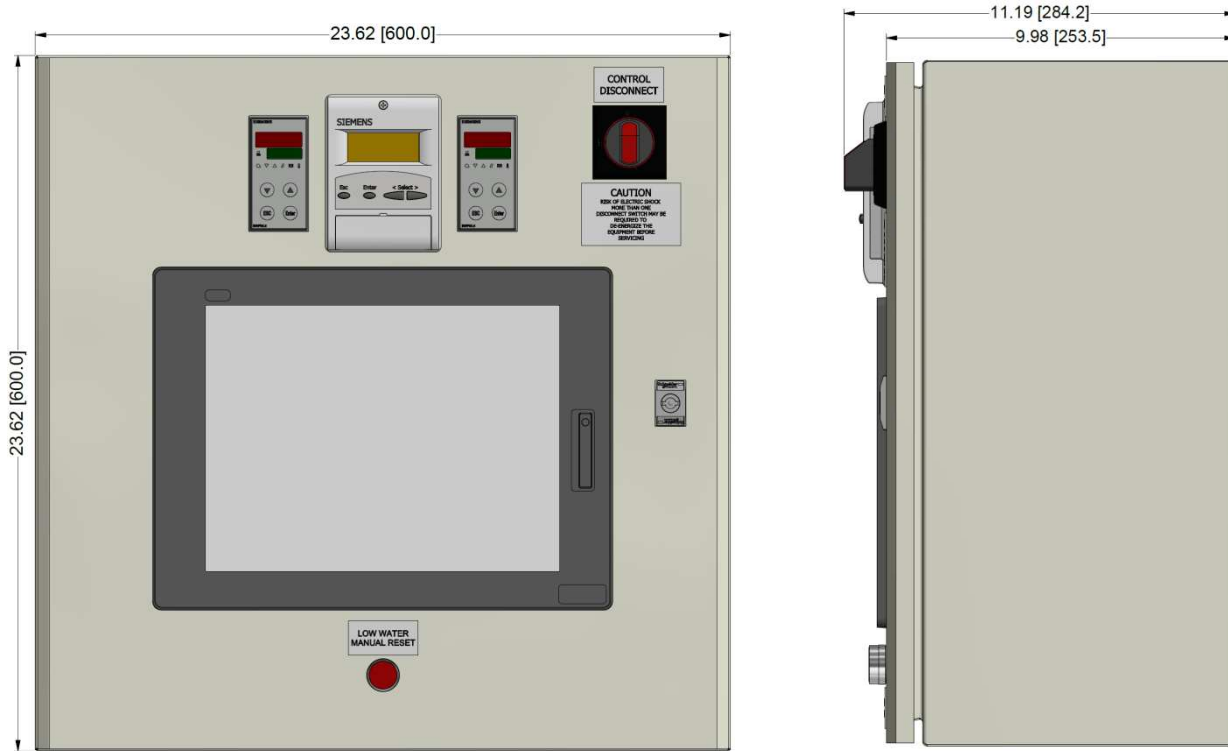
20"X 20" X 10" Enclosure Dimensions (continued)

TS-KT6xxx-xx2-XY52



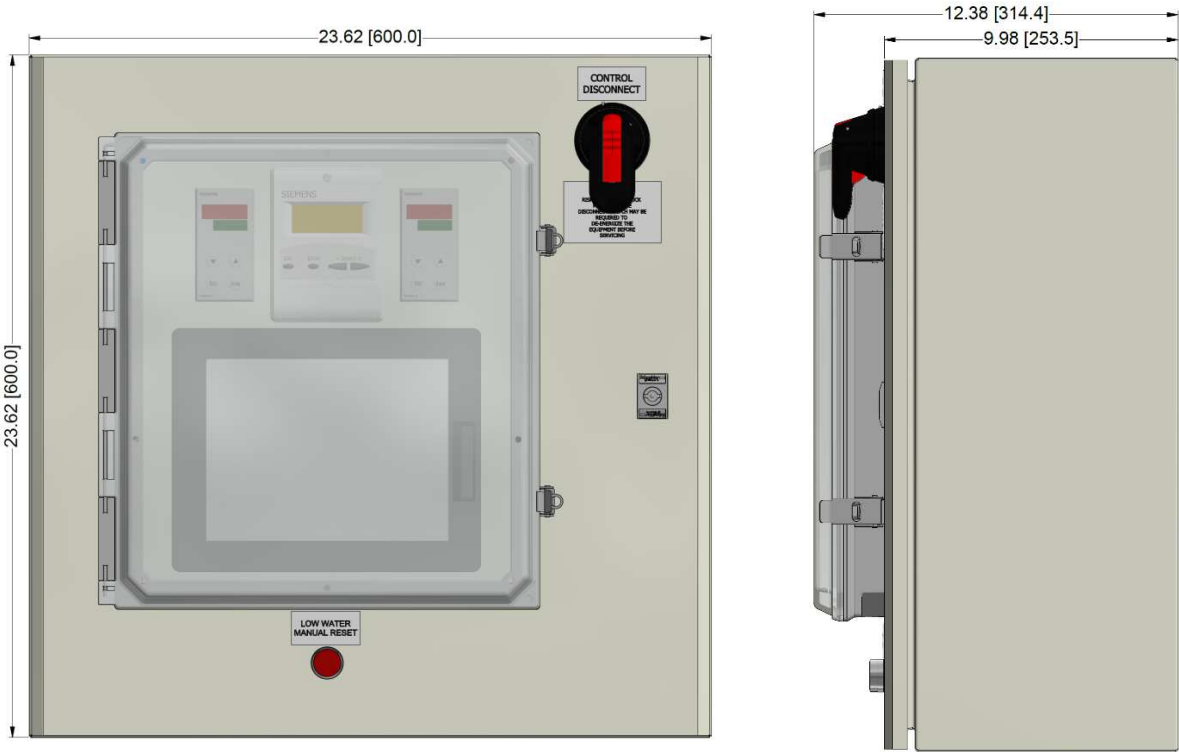
24"X 24" X 10" Enclosure Dimensions (continued)

TS-KT5xxx-xx1-XY52



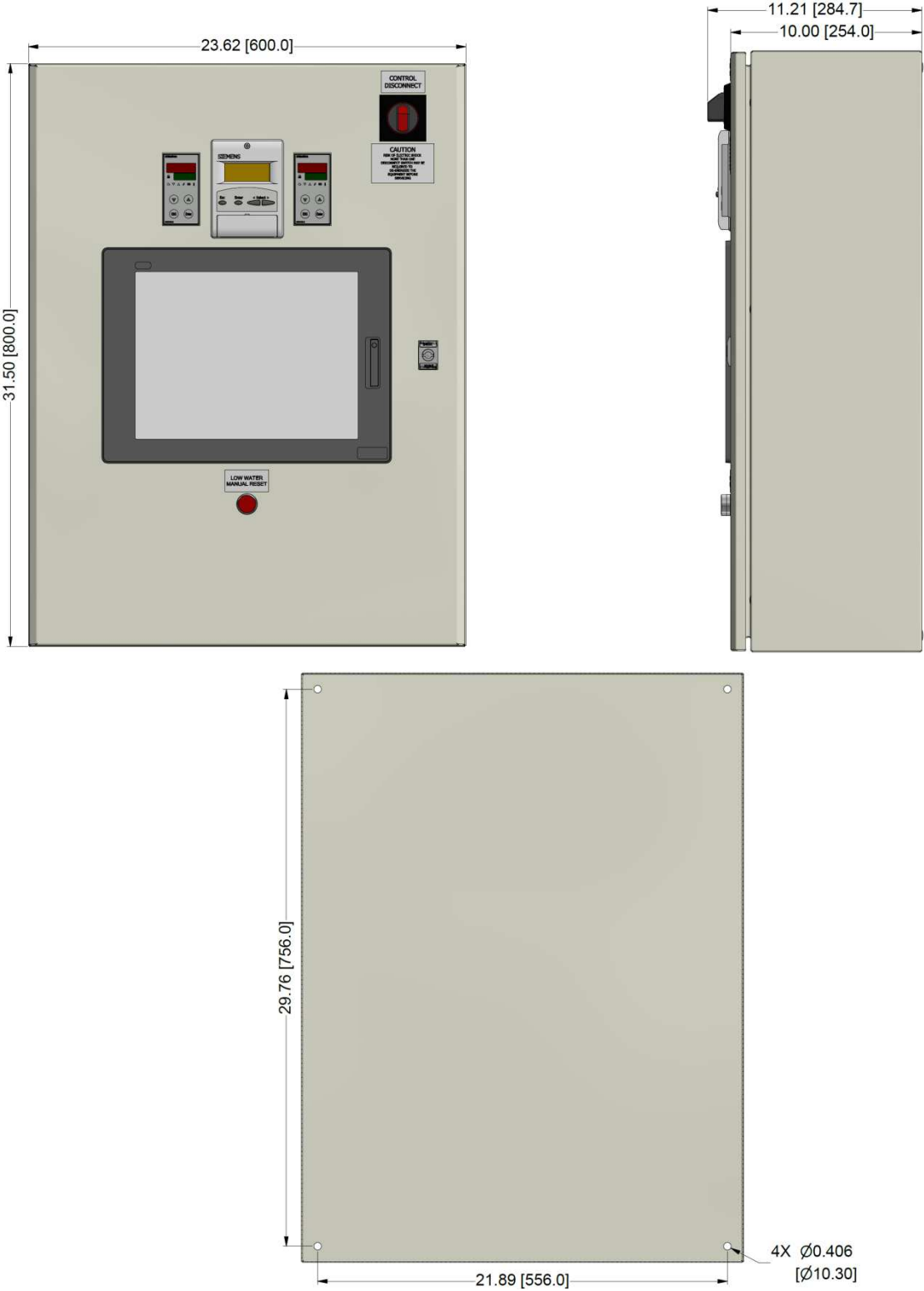
24"X 24" X 10" Enclosure Dimensions (continued)

TS-KT0xxx-xx2-XY52



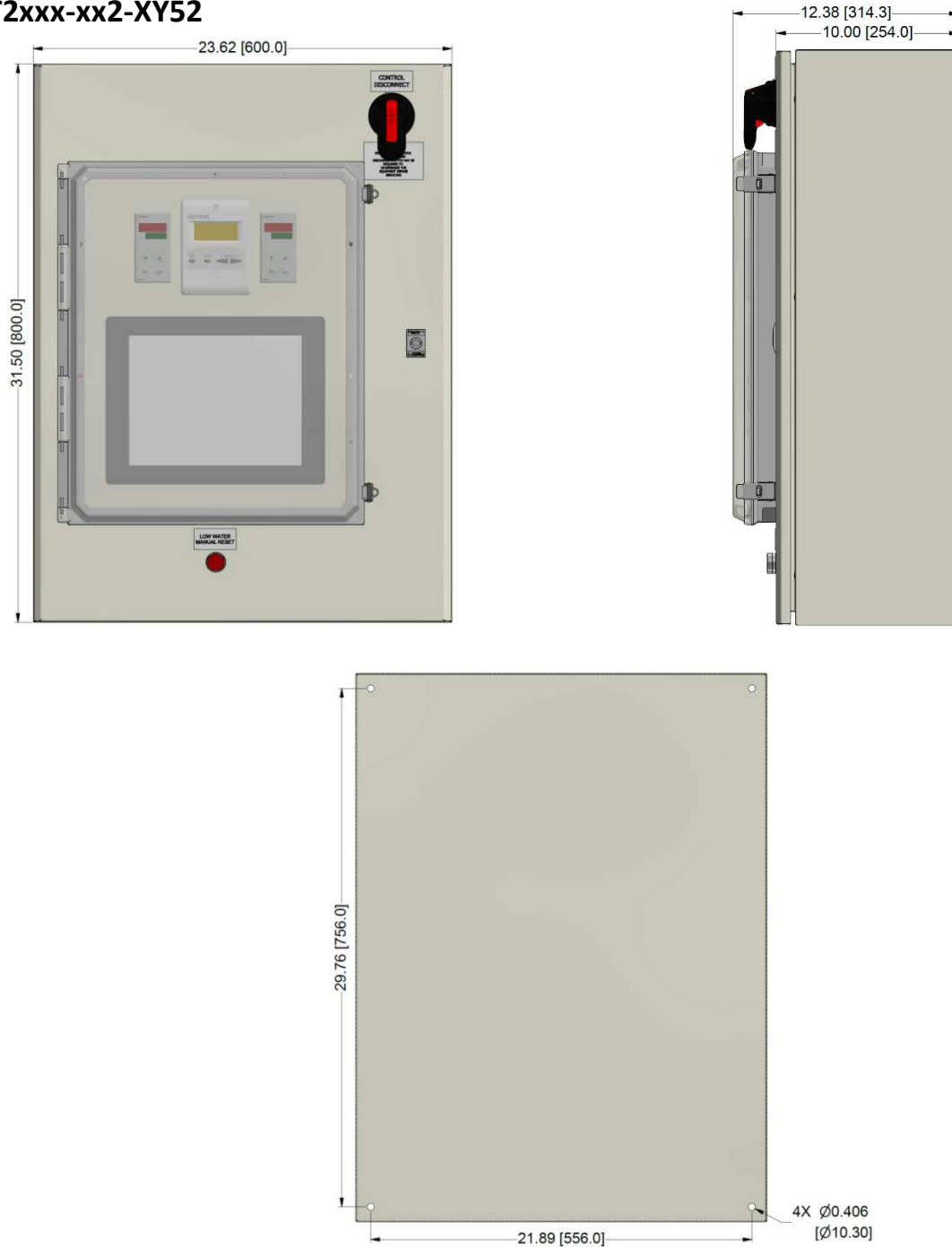
32"X 24" X 10" Enclosure Dimensions (continued)

TS-KT5xxx-xx1-XY52



32" X 24" X 10" Enclosure Dimensions (continued)

TS-KT2xxx-xx2-XY52



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