NXF4000 Wiring Application Guide

April 6, 2020

CAPABILITIES OF THE NXF4000

For most applications the NXF4000 can be adapted to work. Alternative configurations are listed below for special options.

- Revert to pilot – Use a PPC4000 with YB110 and YP118 or YP138 programmer
- Flame rod – Use a PPC4000 with YB110 and YP1xx programmer or BP110UVFR-Sx(M)(P)
- UV and flame rod simultaneously – Use a PPC4000 with BP110UVFR-Sx(M)(P)
- Ultraviolet self-check – Use a PPC4000 with YB110UVSC and YP1xx programmer
- Expanded annunciation – Use a PPC4000 with YB110, YP1xx programmer and YZ300 annunciator

IMPORTANT NOTES ABOUT WIRING DIAGRAMS

1. Wiring diagrams are generic. Where there are multiple options, these are outlined so that one can be chosen (such as for a steam or a water limit option).
2. Up to ten servos can be connected. Up to four servos can be used with a specific profile. The wiring example shows five servos connected with the last two receiving power from an external power supply. The internal power supply for the servos can supply up to 60W of power, so the need for an external power supply entirely depends upon the power requirements of the connected servos. The power requirements are as follows: FX04 (7.5W), FX20 (35W) and FX50 (38W). If there were three FX04 and two FX20 servos in a system, this would total 92.5W. This is in excess of the available 60W. The two options in this scenario would be to either put all five servos on an external 120W power supply or to put the three FX04 servos and one FX20 servo on the internal power supply and put the remaining FX20 servo on an external 60W power supply.
3. Digital input 1 is used for the Burner On/Off switch. This must be programmed as *DIGITAL INPUT SETUP → DI 1 → USE = BURNER CONTROL*. If the burner control switch on the NXD410 or NXD410TS (user interface) is to be used as well set *DIGITAL INPUT SETUP → DI 1 → ACTION = AND*. The burner control switch on the user interface must also be enabled by programming *KEYPAD SETUP → BURNER ON/OFF = USED*. Note that other inputs can be used for this function – this is just the one depicted in the wiring diagrams.
4. If valve proving is used, digital inputs 7 and 8 are used for this function. This must be programmed as *DIGITAL INPUT SETUP → DI 7 → USE = GVP NORM. OPEN*. The profile assignment must be programmed as *DIGITAL INPUT SETUP → DI 7 → ASSIGNMENT = (profiles to apply valve proving to)*. Also program *DIGITAL INPUT SETUP → DI 8 → USE = GVP NORM. CLOSED* and *DIGITAL INPUT SETUP → DI 8 → ASSIGNMENT = (profiles to apply valve proving to)*. Note that other inputs can be used for these functions – these are just the ones depicted in the wiring diagrams.

IMPORTANT NOTES ABOUT WIRING DIAGRAMS (CONTINUED)

5. Digital inputs 10 and 11 are used to monitor the combustion air switch. This also includes a check that the switch changes states to off when the burner is idle. This must be programmed as *DIGITAL INPUT SETUP → DI 10 → USE = AIRFLOW N. OPEN*. Also program *DIGITAL INPUT SETUP → DI 11 → USE = AIRFLOW N. CLOSED*. Note that other inputs can be used for these functions – these are just the ones depicted in the wiring diagrams.
6. Digital input 15 is used for the fuel valve end switches (proof of closure). This must be programmed as *DIGITAL INPUT SETUP → DI 15 → USE = FVES/POC*. The profile assignment must be programmed as *DIGITAL INPUT SETUP → DI 15 → ASSIGNMENT = (profiles to apply valve proving to)*. Note that other inputs can be used for this function – this is just the one depicted in the wiring diagrams.
7. If a normally open vent valve is connected in a double block and bleed arrangement, a separate terminal is provided to control the vent valve if valve proving is enabled. Using this terminal is required for the valve proving operation to work correctly. Enable this terminal by programming *BURNER CNTRL SETUP → VALVE PROVING → METHOD = 3-VALVE (NO)*. If valve proving is not used, the vent valve should be connected in parallel to the gas valves (total load must be under 575VA).
8. Fuel selection between gas and oil is shown using a single switch connected to a relay. This could also be done directly via a multi-pole switch.
9. When using direct spark with oil, program the oil profile as a gas fuel and connect the main oil valve(s) to terminal P5.4 (normally used for the upstream gas valve). If there are both gas and oil profiles, the output from this terminal must be switched with a relay or selector to the correct valves. Another option when using direct spark is to program the oil profile as an oil fuel, but program the pilot as intermittent (*BURNER CNTRL SETUP → PILOT = INTERMITTENT*) and connect the main oil valve(s) to terminal P5.7 (normally used for the pilot valve). The second option doesn't work when both gas and oil profiles are used because the pilot type is a global setting for all profiles.
10. The optional NXTSD507HD (7") or NXTSD512HD (12") touchscreens use the external Modbus connection for communication. When these screens are connected, this connection is not available for use.
11. Connecting a VFD to the NXF4000 requires the addition of the NXCESVFD add-on card.
12. **Diagrams are optimized to print at 11x17 size or larger.**

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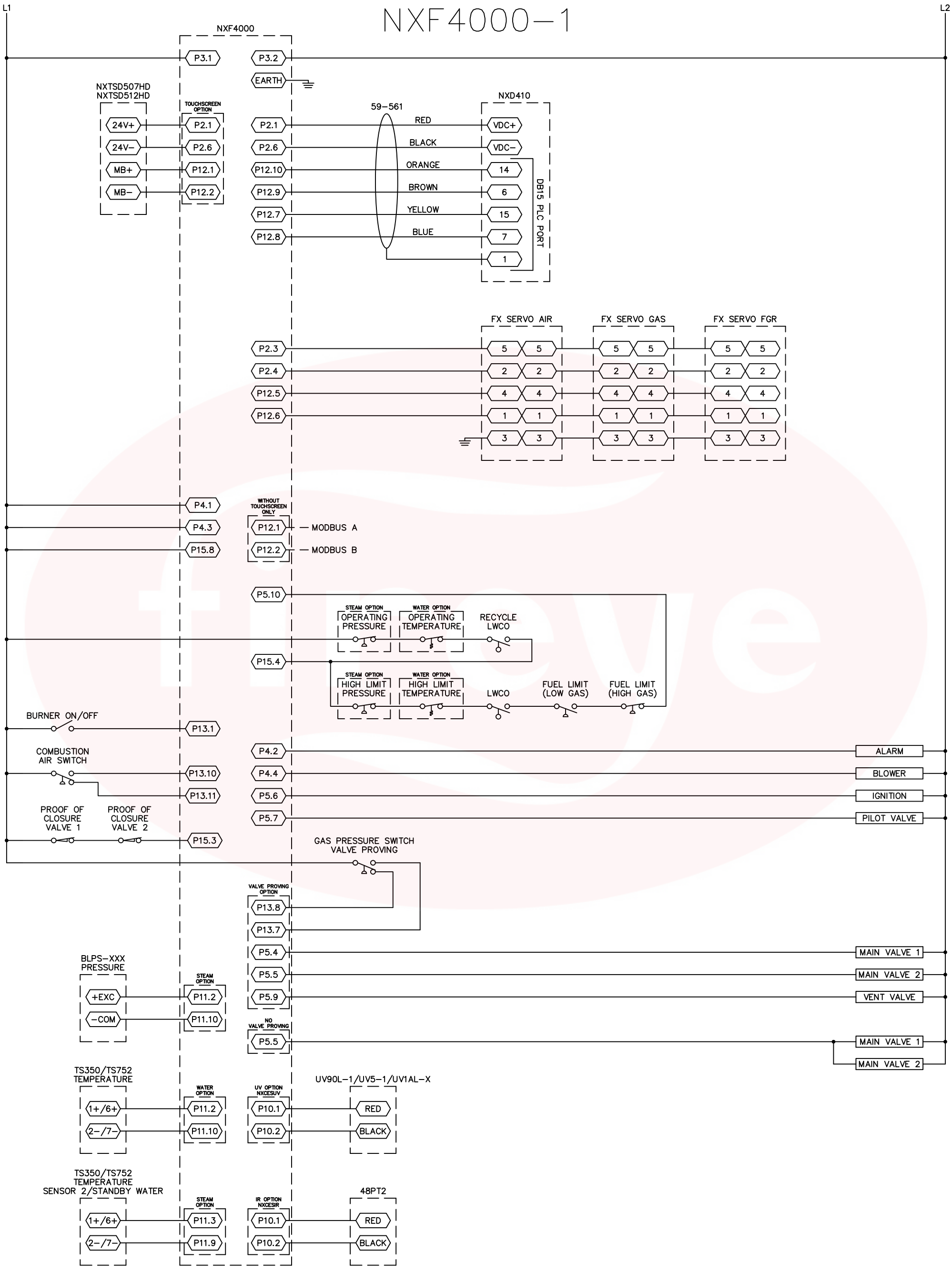
WIRING DIAGRAMS BY FEATURE

Diagram Number	User Interface	O_2	VFD	VFD Bypass	Dual Fuel
NXF4000-1	NXD410	---	---	---	---
NXF4000-2	NXD410TS	---	---	---	---
NXF4000-3	NXD410	---	ACS550	---	---
NXF4000-4	NXD410TS	---	ACS550	---	---
NXF4000-5	NXD410	---	ACS550	Yes	---
NXF4000-6	NXD410TS	---	ACS550	Yes	---
NXF4000-7	NXD410	NXCESO2	ACS550	---	Yes
NXF4000-8	NXD410	FXO2TRIM-1	ACS550	---	Yes
NXF4000-9	NXD410TS	NXCESO2	ACS550	---	Yes
NXF4000-10	NXD410TS	FXO2TRIM-1	ACS550	---	Yes
NXF4000-11	NXD410	NXCESO2	ACS550	Yes	Yes
NXF4000-12	NXD410	FXO2TRIM-1	ACS550	Yes	Yes
NXF4000-13	NXD410TS	NXCESO2	ACS550	Yes	Yes
NXF4000-14	NXD410TS	FXO2TRIM-1	ACS550	Yes	Yes

NXF4000–1


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
FX SERVO AIR
FX SERVO GAS
FX SERVO FGR
P2.3
P2.4
P12.5
P12.6
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2
4
1
3
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P4.3
P15.8
P12.1
P12.2
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MODBUS B
P5.10
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BLOWER
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P13.7
P5.4
P5.5
P5.9
MAIN VALVE 1
MAIN VALVE 2
VENT VALVE
NO VALVE PROVING
BLPS–XXX PRESSURE
+EXC
–COM
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1+/6+
2–/7–
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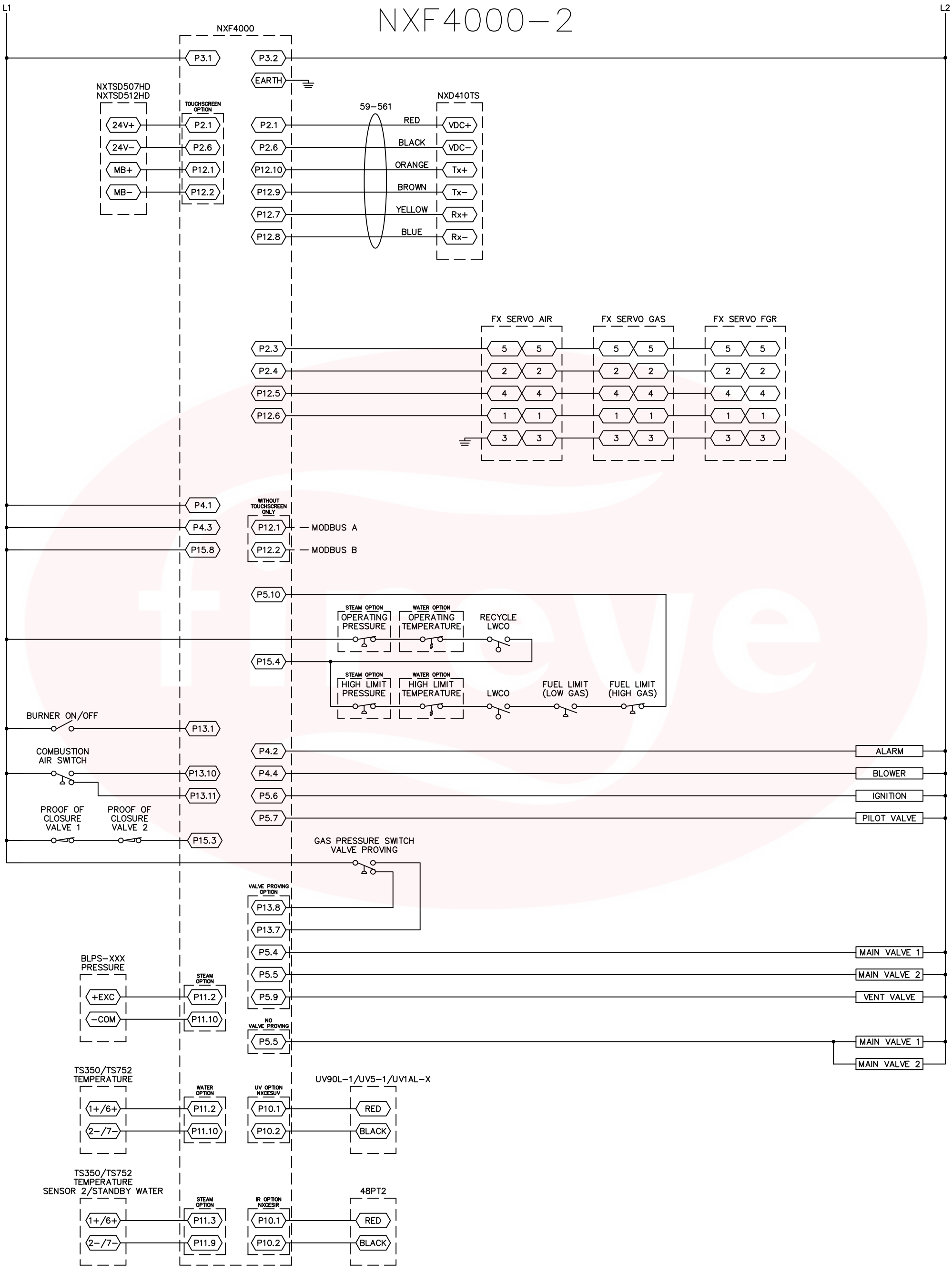
P10.2
RED
BLACK
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9
IR OPTION NXCESIR
48PT2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L1
L2
NXF4000
P3.1
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NXTSD512HD
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24V–
MB+
MB–
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P2.6
P12.1
P12.2
59–561
NXD410TS
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ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P12.10
P12.9
P12.7
P12.8
FX SERVO AIR
FX SERVO GAS
FX SERVO FGR
P2.3
P2.4
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MAIN VALVE 2
VENT VALVE
NO VALVE PROVING
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+EXC
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2–/7–
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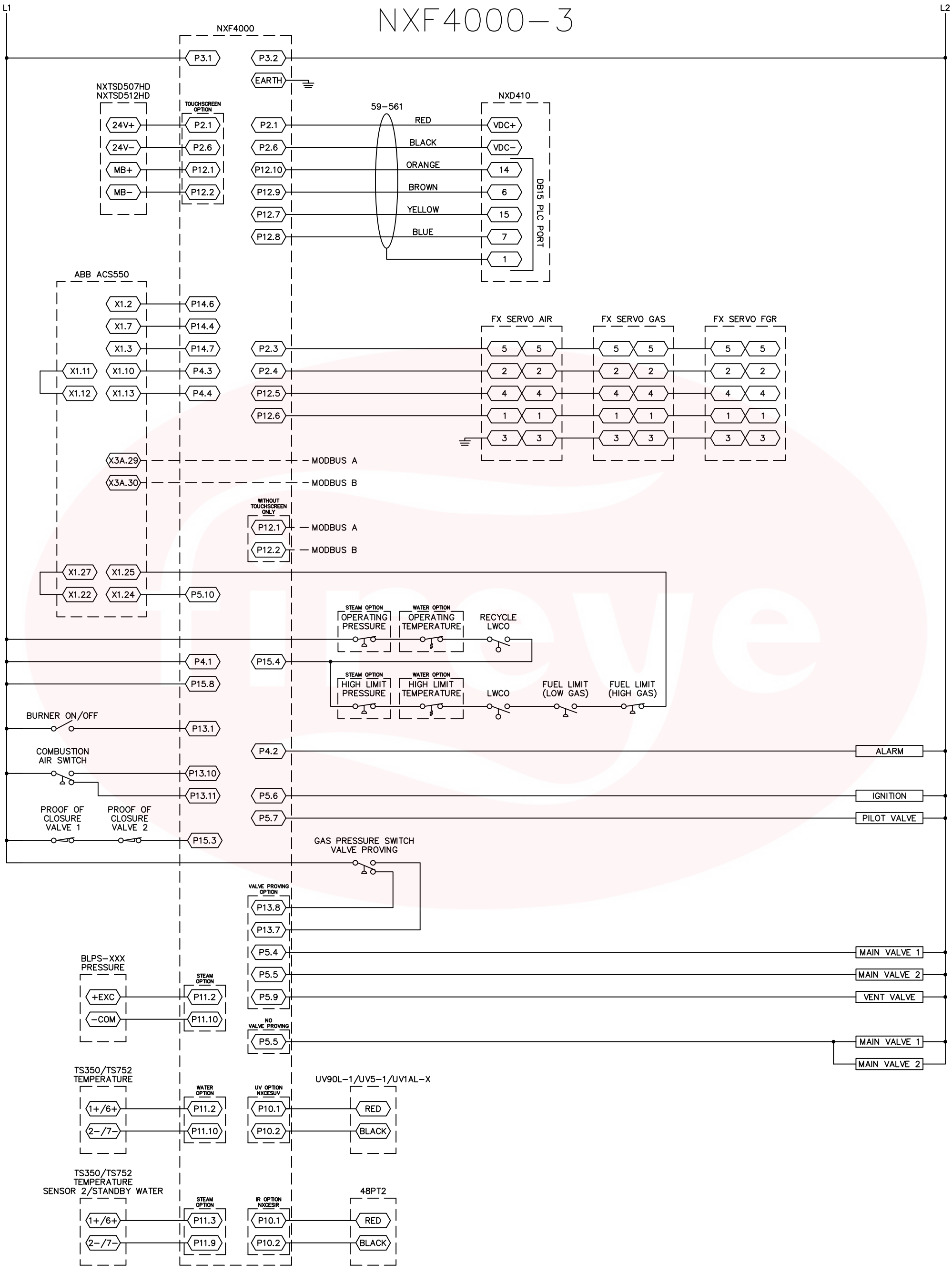
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9
IR OPTION NXCESIR
48PT2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L2
NXF4000
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P3.2
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NXTSD507HD
NXTSD512HD
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24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
NXD410
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
P4.3
P4.4
P2.3
P2.4
P12.5
P12.6
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FX SERVO GAS
FX SERVO FGR
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X3A.30
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X1.25
X1.22
X1.24
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HIGH LIMIT TEMPERATURE
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FUEL LIMIT (HIGH GAS)
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P5.5
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MAIN VALVE 1
MAIN VALVE 2
VENT VALVE
NO VALVE PROVING
BLPS–XXX PRESSURE
+EXC
–COM
P11.2
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TS350/TS752 TEMPERATURE
1+/6+
2–/7–
UV OPTION NXCESUV
UV90L–1/UV5–1/UV1AL–X
P10.1
P10.2
RED
BLACK
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
IR OPTION NXCESIR
48PT2
P11.3
P11.9

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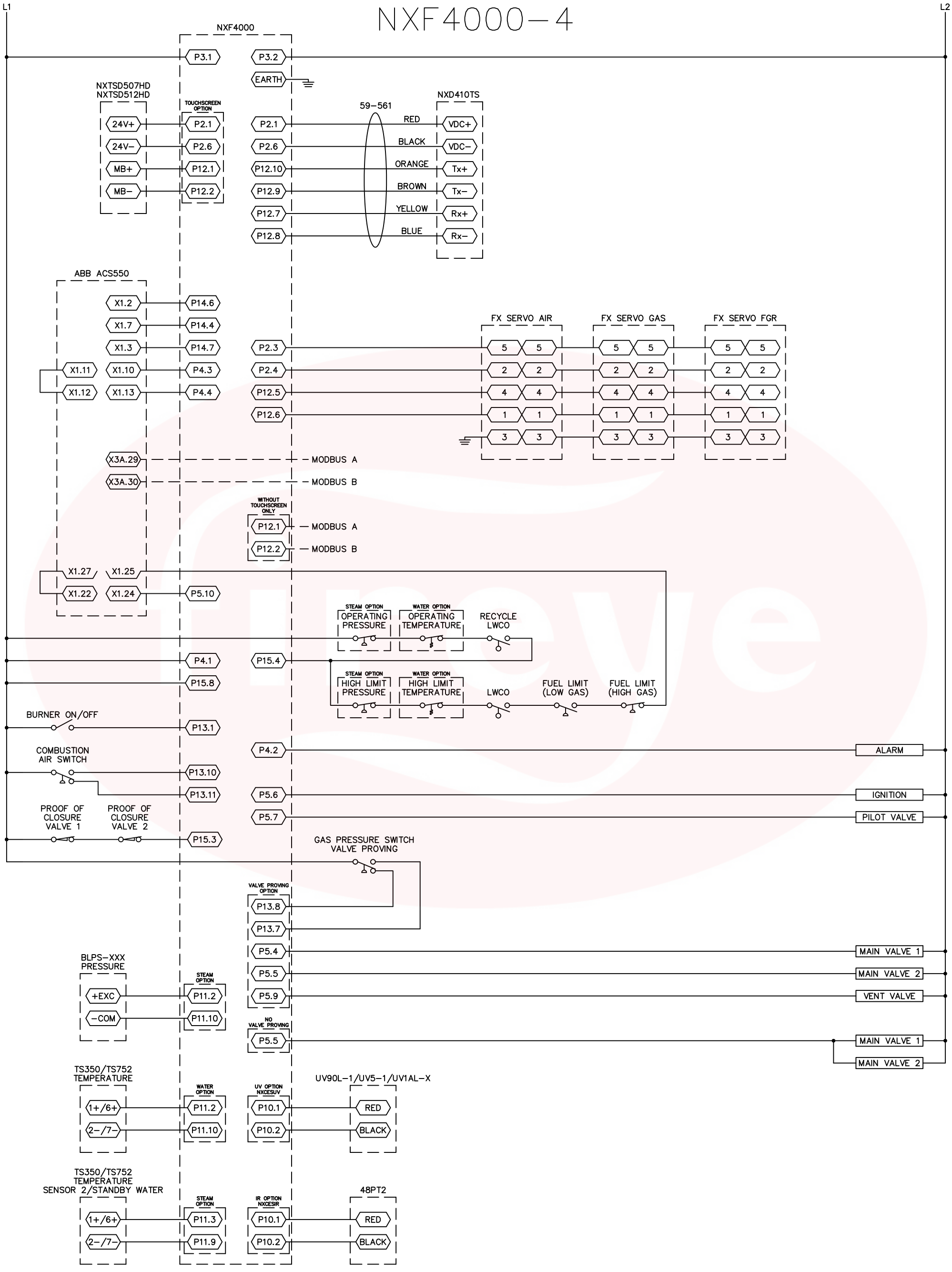
L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410TS
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P12.10
P12.9
P12.7
P12.8
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
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P2.3
P2.4
P12.5
P12.6
FX SERVO AIR
FX SERVO GAS
FX SERVO FGR
X3A.29
X3A.30
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MODBUS B
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X1.27
X1.25
X1.22
X1.24
P5.10
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FUEL LIMIT (HIGH GAS)
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P5.4
P5.5
P5.9
MAIN VALVE 1
MAIN VALVE 2
VENT VALVE
NO VALVE PROVING
BLPS–XXX PRESSURE
+EXC
–COM
P11.2
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TS350/TS752 TEMPERATURE
1+/6+
2–/7–
UV OPTION NXCESUV
UV90L–1/UV5–1/UV1AL–X
P10.1
P10.2
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
IR OPTION NXCESIR
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P11.3
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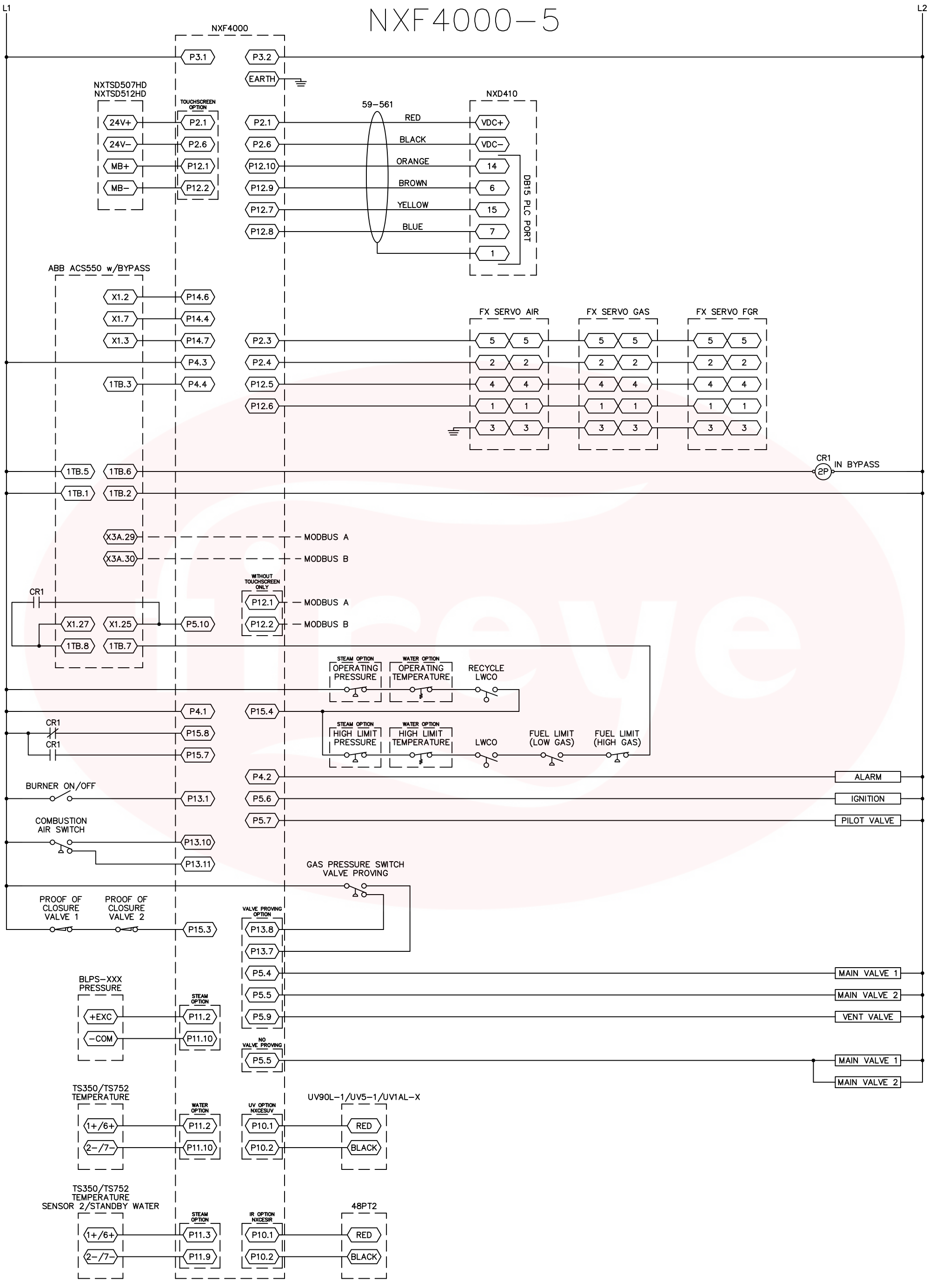
L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
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P2.6
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P12.2
59–561
NXD410
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
1TB.3
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P4.3
P4.4
P2.3
P2.4
P12.5
P12.6
FX SERVO AIR
FX SERVO GAS
FX SERVO FGR
1TB.5
1TB.6
1TB.1
1TB.2
CR1
2P
IN BYPASS
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
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X1.27
X1.25
1TB.8
1TB.7
P5.10
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WATER OPTION
OPERATING PRESSURE
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RECYCLE LWCO
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
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FUEL LIMIT (HIGH GAS)
P4.1
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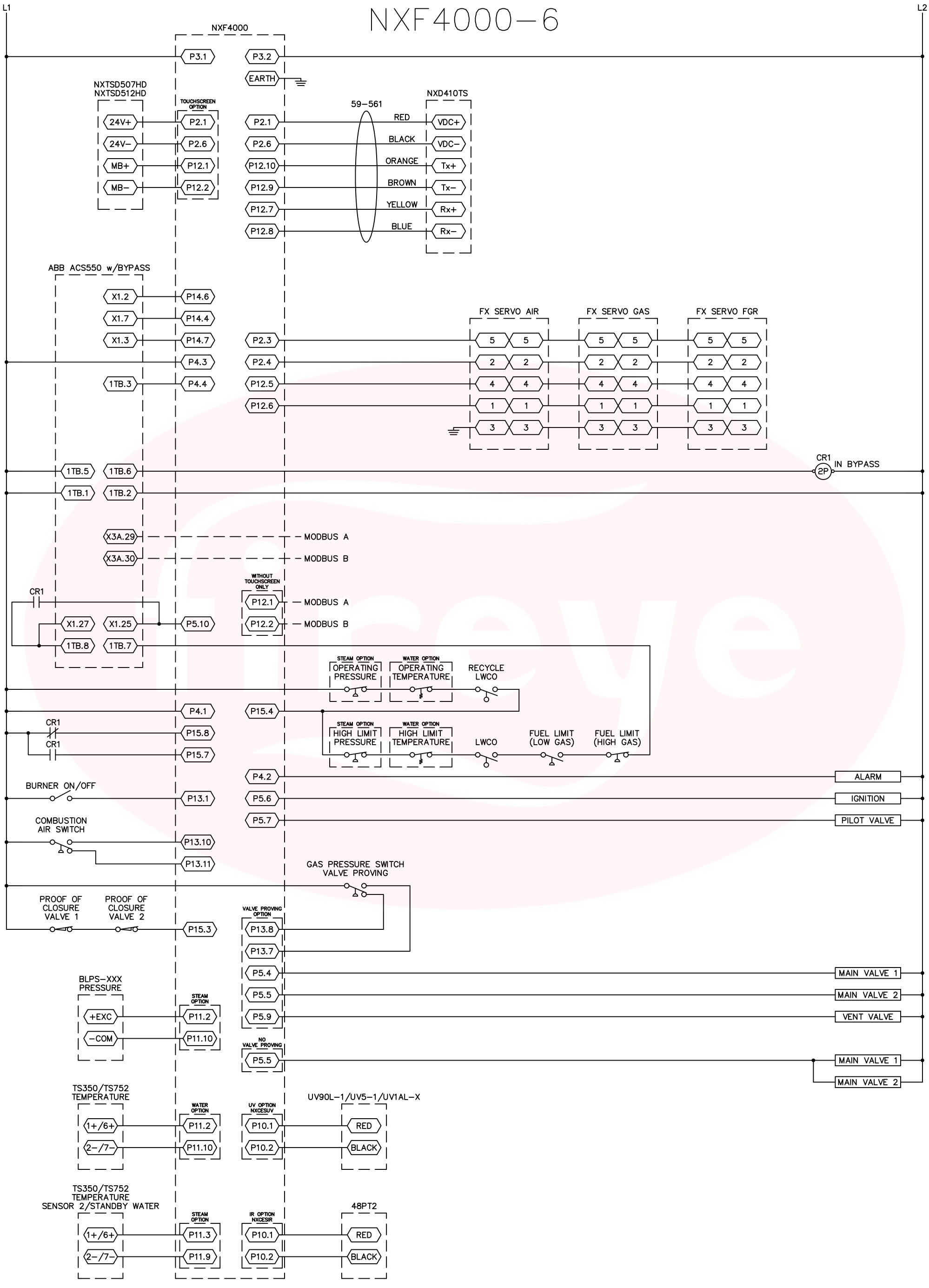
PROOF OF CLOSURE VALVE 2
P15.3
VALVE PROVING OPTION
P13.8
P13.7
P5.4
P5.5
P5.9
MAIN VALVE 1
MAIN VALVE 2
VENT VALVE
NO VALVE PROVING
BLPS–XXX PRESSURE
+EXC
–COM
P11.2
P11.10
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
UV OPTION NXCESUV
UV90L–1/UV5–1/UV1AL–X
P10.1
P10.2
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
IR OPTION NXCESIR
48PT2
P11.3
P11.9

NXF4000–6


L1
L2
NXF4000
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P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410TS
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
1TB.3
P14.6
P14.4
P14.7
P4.4
P4.3
FX SERVO AIR
FX SERVO GAS
FX SERVO FGR
P2.3
P2.4
P12.5
P12.6
5 5
2 2
4 4
1 1
3 3
1TB.5
1TB.6
1TB.1
1TB.2
CR1
2P
IN BYPASS
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
MODBUS A
MODBUS B
CR1
X1.27
X1.25
1TB.8
1TB.7
P5.10
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RECYCLE LWCO
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P15.4
CR1
CR1
P15.8
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HIGH LIMIT TEMPERATURE
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PROOF OF CLOSURE VALVE 1
PROOF OF CLOSURE VALVE 2
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P5.4
P5.5
P5.9
MAIN VALVE 1
MAIN VALVE 2
VENT VALVE
BLPS–XXX PRESSURE
+EXC
–COM
STEAM OPTION
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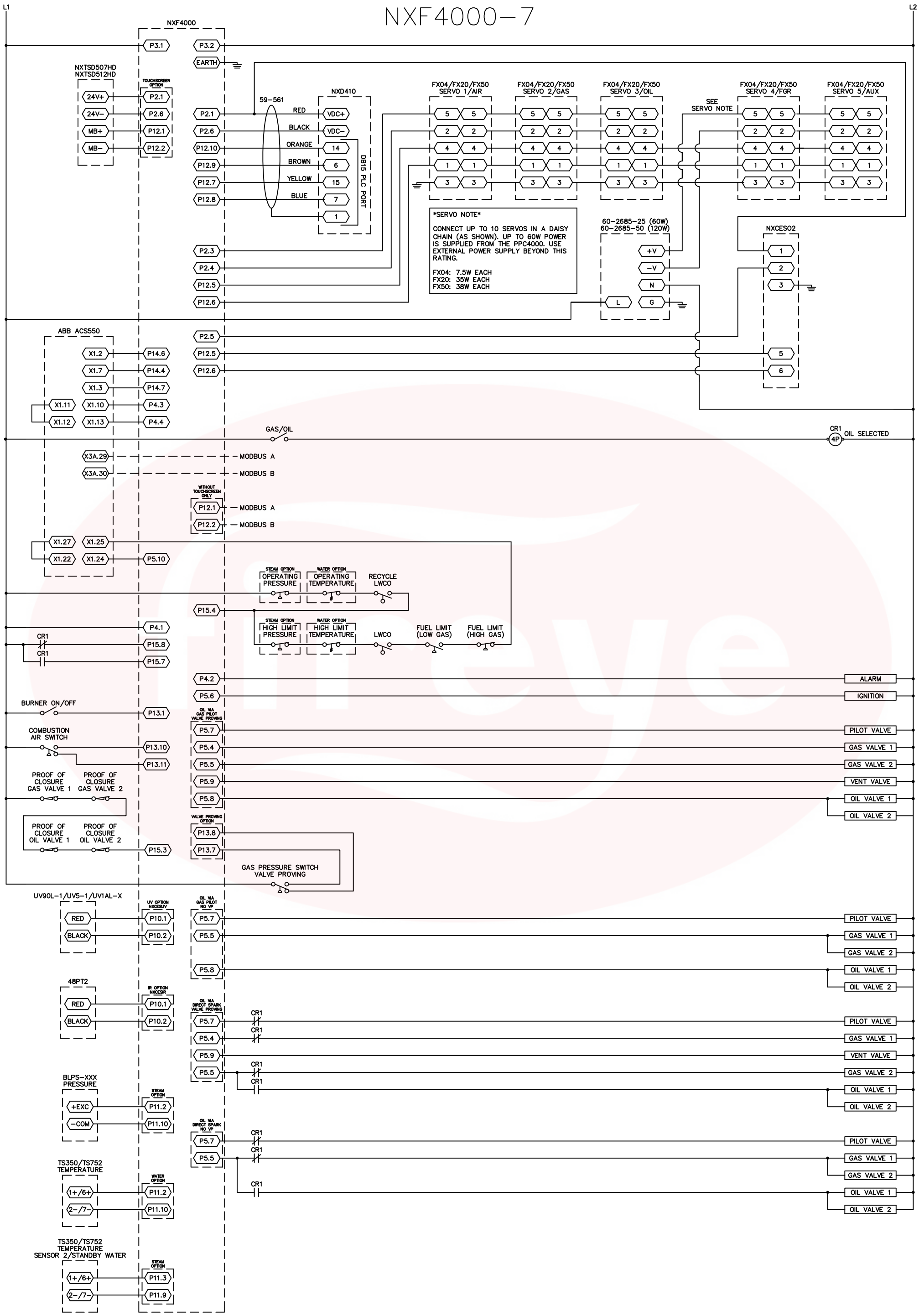
P11.10
NO VALVE PROVING
P5.5
MAIN VALVE 1
MAIN VALVE 2
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
WATER OPTION
P11.2
P11.10
UV OPTION NXCESUV
P10.1
P10.2
UV90L–1/UV5–1/UV1AL–X
RED
BLACK
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
1+/6+
2–/7–
STEAM OPTION
P11.3
P11.9
IR OPTION NXCESIR
P10.1
P10.2
48PT2
RED
BLACK

NXF4000–7


L1
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NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410
RED
BLACK
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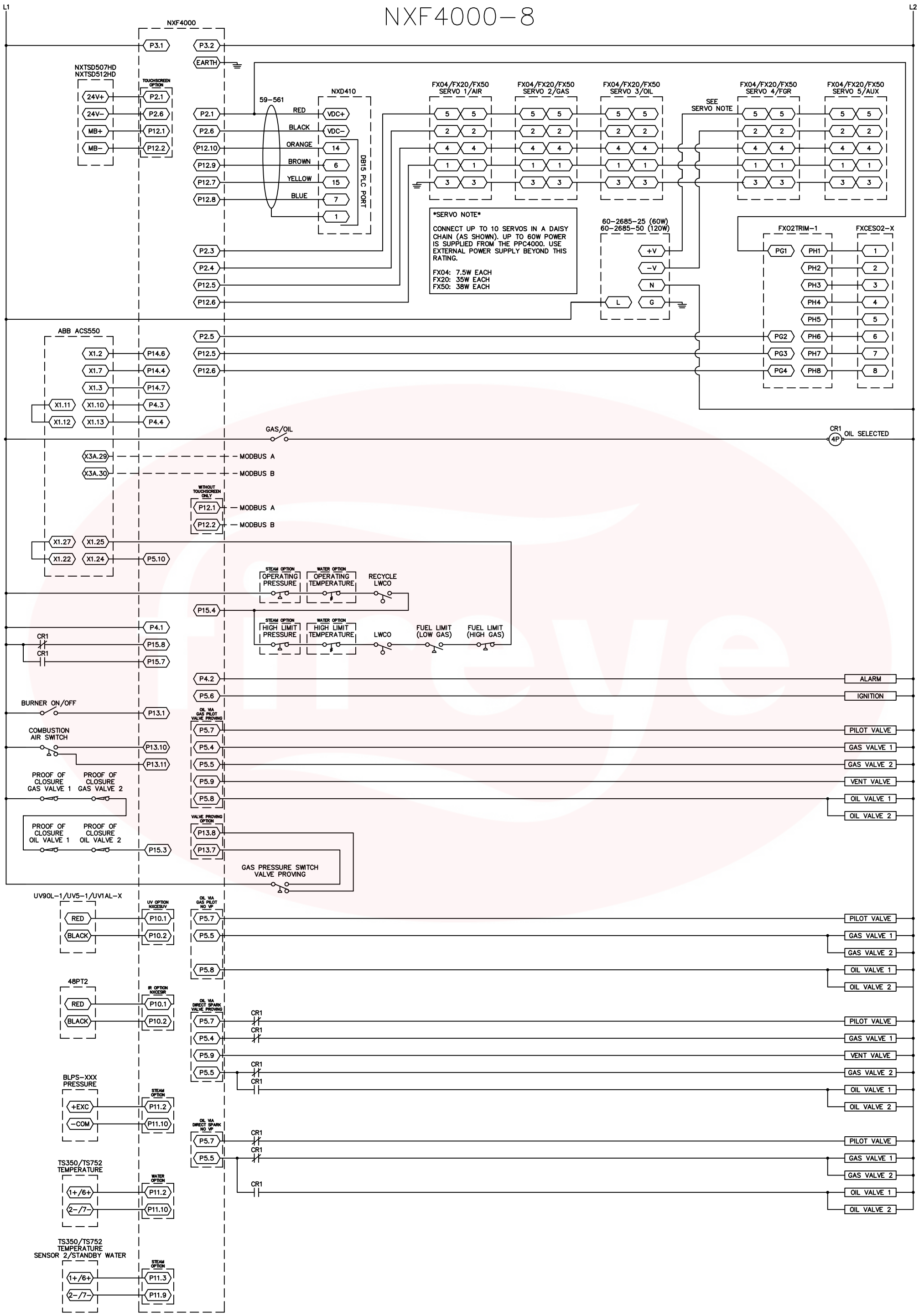
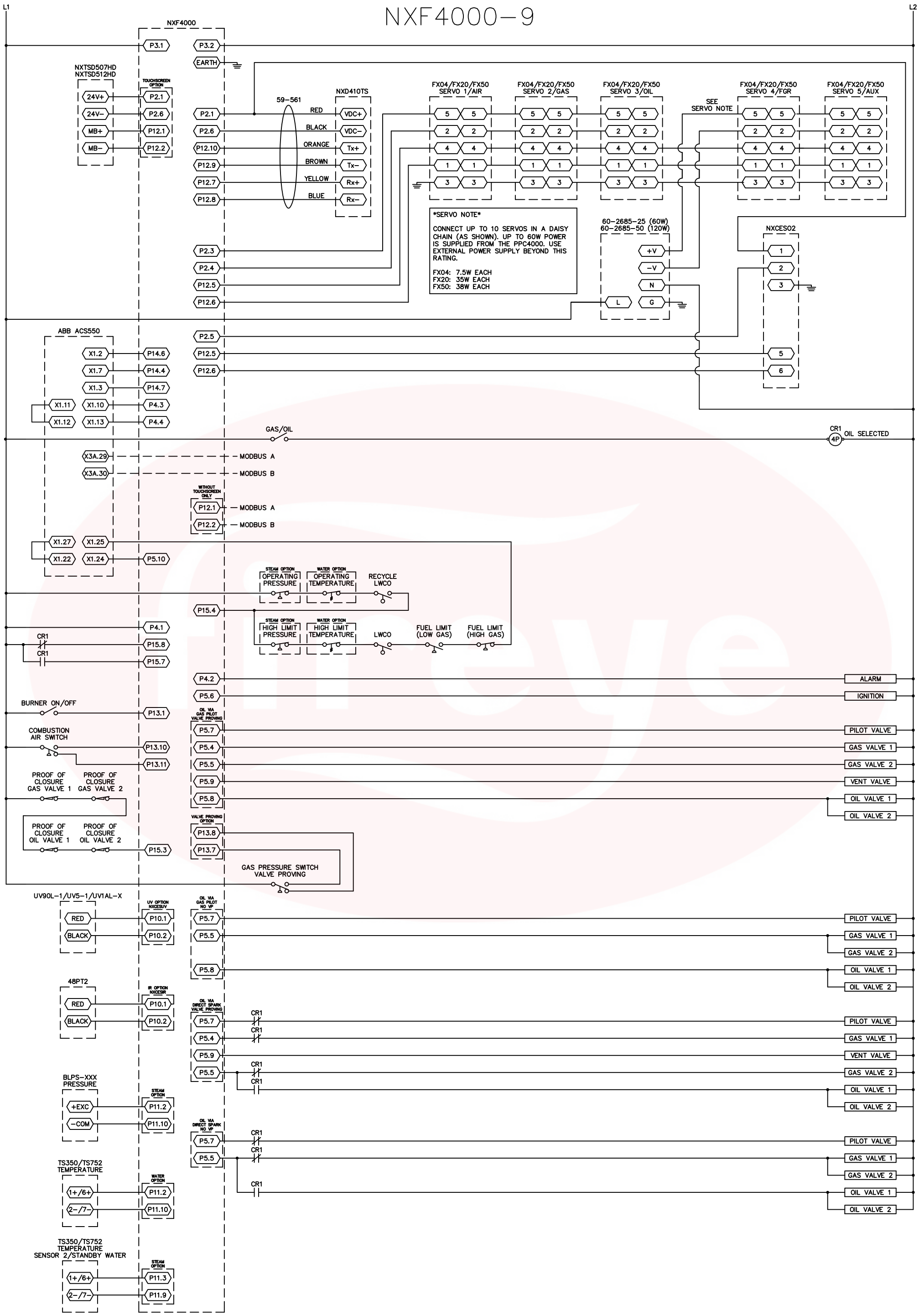
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
NXCES02
P2.3
P2.4
P12.5
P12.6
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
P4.3
P4.4
P2.5
P12.5
P12.6
GAS/OIL
CR1
4P
OIL SELECTED
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
MODBUS A
MODBUS B
X1.27
X1.25
X1.22
X1.24
P5.10
STEAM OPTION
OPERATING PRESSURE
WATER OPTION
OPERATING TEMPERATURE
RECYCLE LWCO
P15.4
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
P4.1
CR1
P15.8
CR1
P15.7
P4.2
ALARM
P5.6
IGNITION
BURNER ON/OFF
P13.1
OIL VIA GAS PILOT VALVE PROVING
P5.7
PILOT VALVE
COMBUSTION AIR SWITCH
P13.10
P5.4
GAS VALVE 1
P13.11
P5.5
GAS VALVE 2
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
P5.9
VENT VALVE
P5.8
OIL VALVE 1
OIL VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P15.3
VALVE PROVING OPTION
P13.8
P13.7
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
RED
BLACK
UV OPTION NXCESUV
P10.1
P10.2
OIL VIA GAS PILOT NO VP
P5.7
PILOT VALVE
P5.5
GAS VALVE 1
GAS VALVE 2
P5.8
OIL VALVE 1
OIL VALVE 2
48PT2
IR OPTION NXCESIR
OIL VIA DIRECT SPARK VALVE PROVING
BLPS–XXX PRESSURE
+EXC
–COM
STEAM OPTION
P11.2
P11.10
OIL VIA DIRECT SPARK NO VP
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
WATER OPTION
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9

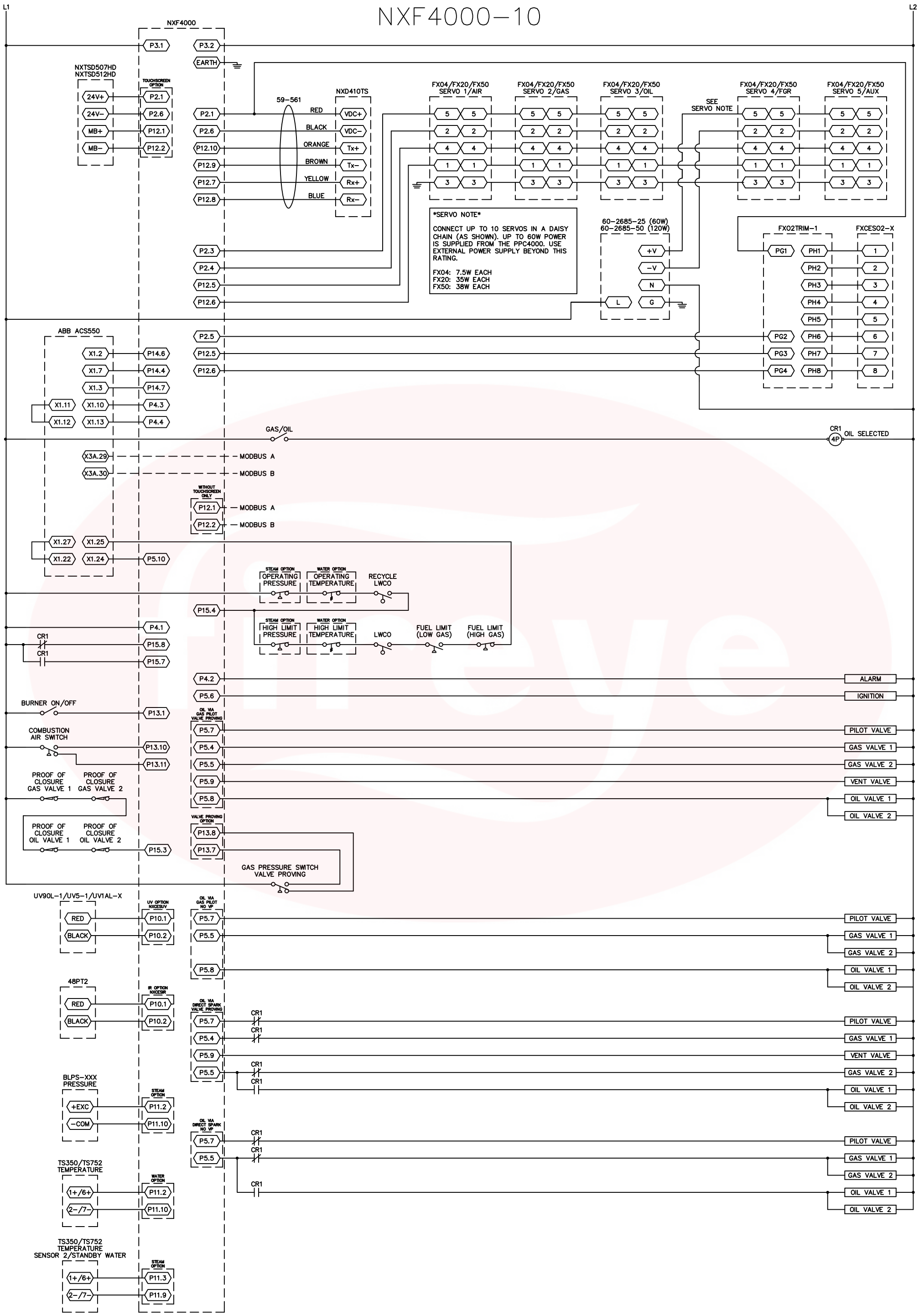
NXF4000-8


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
FX02TRIM–1
FXCES02–X
PG1
PG2
PG3
PG4
PH1
PH2
PH3
PH4
PH5
PH6
PH7
PH8
P2.3
P2.4
P12.5
P12.6
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
P4.3
P4.4
P2.5
P12.5
P12.6
GAS/OIL
CR1
4P
OIL SELECTED
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
X1.27
X1.25
X1.22
X1.24
P5.10
STEAM OPTION
OPERATING PRESSURE
WATER OPTION
OPERATING TEMPERATURE
RECYCLE LWCO
P15.4
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
P4.1
CR1
P15.8
P15.7
P4.2
P5.6
ALARM
IGNITION
BURNER ON/OFF
P13.1
OIL VIA GAS PILOT VALVE PROVING
COMBUSTION AIR SWITCH
P13.10
P13.11
P5.7
P5.4
P5.5
P5.9
P5.8
PILOT VALVE
GAS VALVE 1
GAS VALVE 2
VENT VALVE
OIL VALVE 1
OIL VALVE 2
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P15.3
VALVE PROVING OPTION
P13.8
P13.7
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
UV OPTION NXCESUV
P10.1
P10.2
48PT2
IR OPTION NXCESIR
BLPS–XXX PRESSURE
+EXC
–COM
P11.2
P11.10
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
P11.3
P11.9
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER

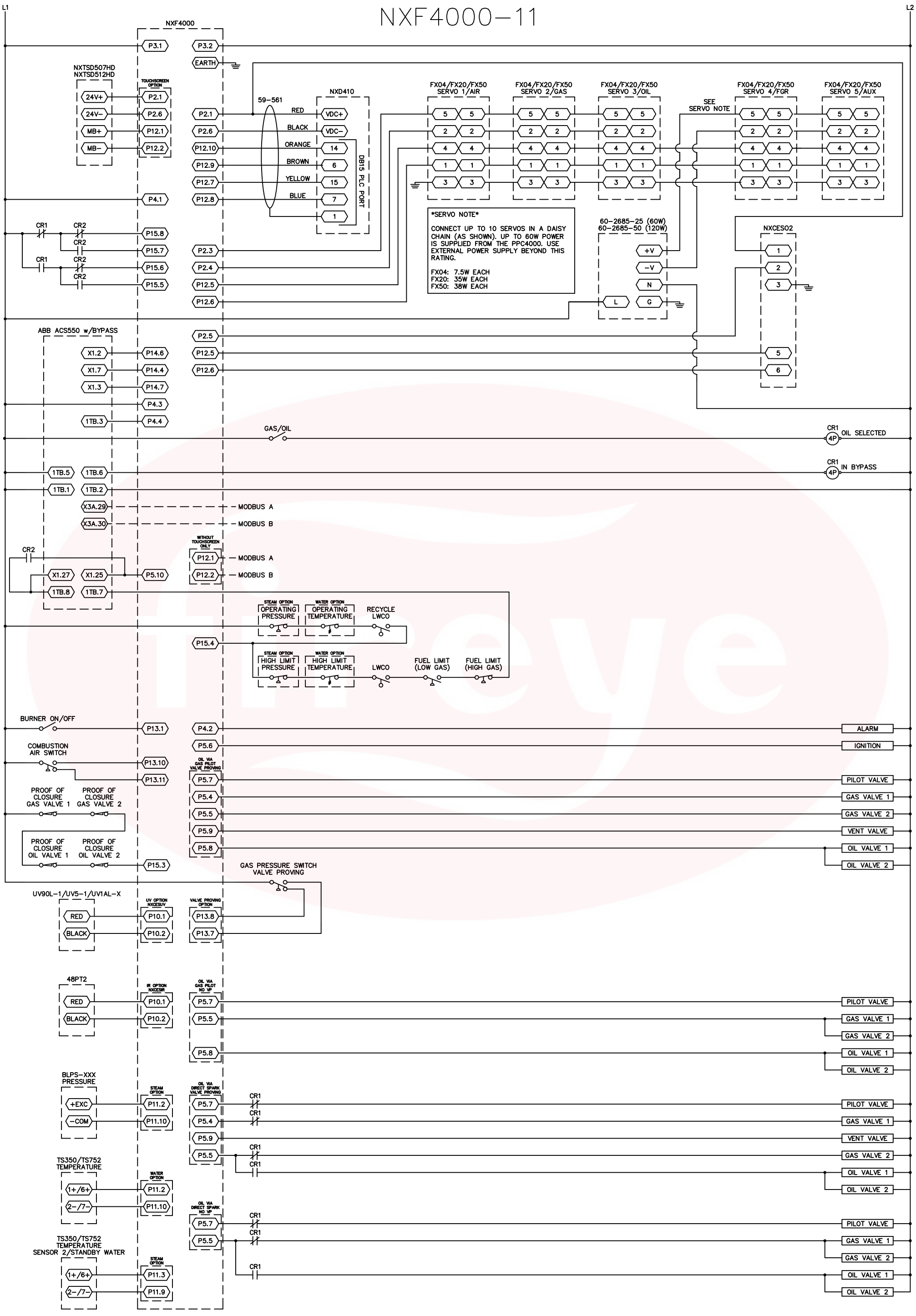
NXF4000–9


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
NXD410TS
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
NXCES02
1
2
3
5
6
P2.3
P2.4
P12.5
P12.6
P2.5
P12.5
P12.6
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
P4.3
P4.4
GAS/OIL
CR1
4P
OIL SELECTED
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
MODBUS A
MODBUS B
X1.27
X1.25
X1.22
X1.24
P5.10
STEAM OPTION
OPERATING PRESSURE
WATER OPTION
OPERATING TEMPERATURE
RECYCLE LWCO
P15.4
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
P4.1
CR1
P15.8
CR1
P15.7
P4.2
P5.6
ALARM
IGNITION
BURNER ON/OFF
P13.1
OIL VIA GAS PILOT VALVE PROVING
COMBUSTION AIR SWITCH
P13.10
P13.11
P5.7
P5.4
P5.5
P5.9
P5.8
PILOT VALVE
GAS VALVE 1
GAS VALVE 2
VENT VALVE
OIL VALVE 1
OIL VALVE 2
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P15.3
VALVE PROVING OPTION
P13.8
P13.7
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
RED
BLACK
UV OPTION NXCESUV
P10.1
P10.2
48PT2
IR OPTION NXCESIR
BLPS–XXX PRESSURE
+EXC
–COM
STEAM OPTION
P11.2
P11.10
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
WATER OPTION
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9

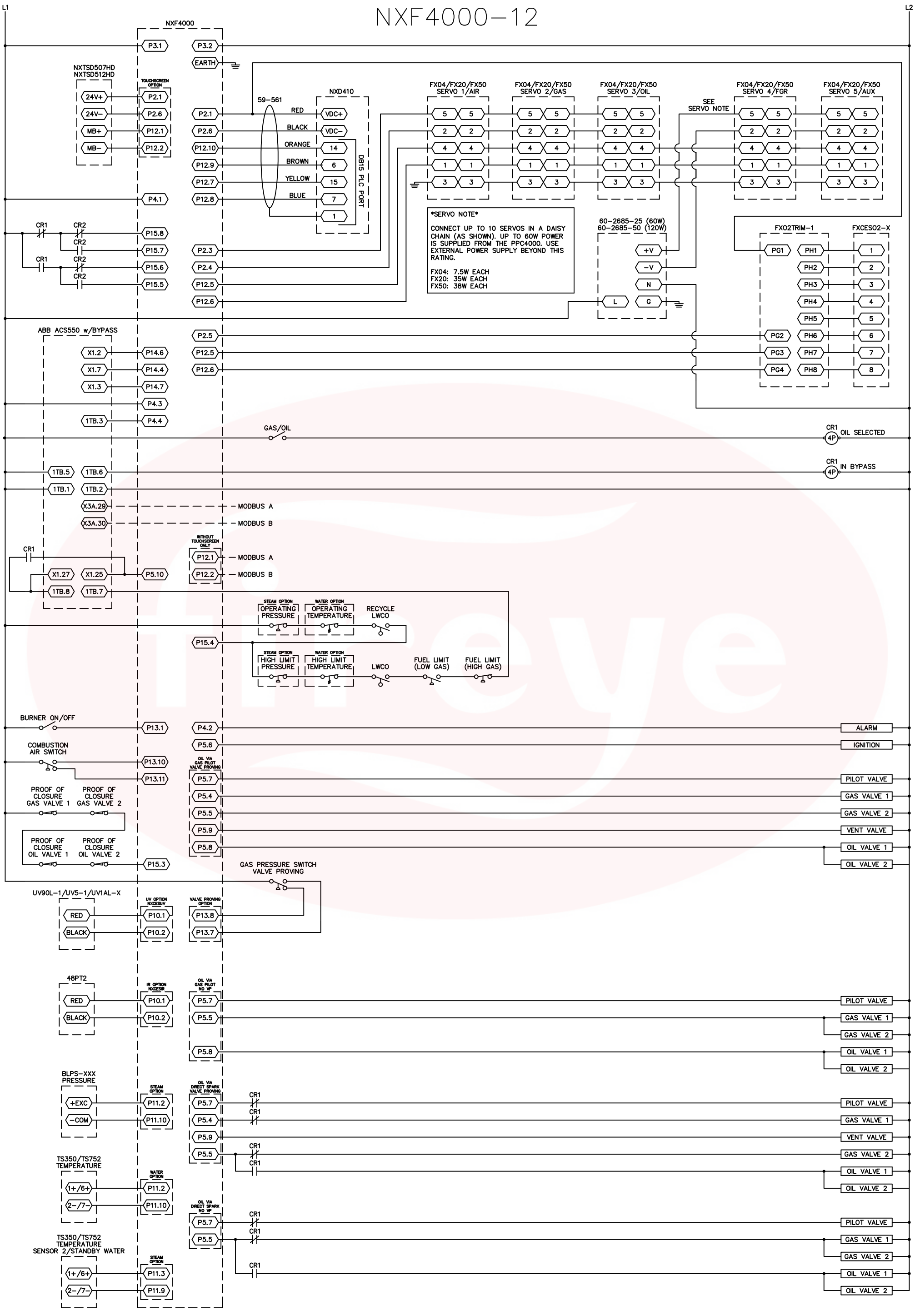
NXF4000–10


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
NXD410TS
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
FX02TRIM–1
FXCES02–X
PG1
PH1
PH2
PH3
PH4
PH5
PG2
PH6
PG3
PH7
PG4
PH8
P2.3
P2.4
P12.5
P12.6
P2.5
P12.5
P12.6
ABB ACS550
X1.2
X1.7
X1.3
X1.11
X1.10
X1.12
X1.13
P14.6
P14.4
P14.7
P4.3
P4.4
GAS/OIL
CR1
4P
OIL SELECTED
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
MODBUS A
MODBUS B
X1.27
X1.25
X1.22
X1.24
P5.10
STEAM OPTION
OPERATING PRESSURE
WATER OPTION
OPERATING TEMPERATURE
RECYCLE LWCO
P15.4
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
P4.1
CR1
P15.8
CR1
P15.7
P4.2
ALARM
P5.6
IGNITION
BURNER ON/OFF
P13.1
OIL VIA GAS PILOT VALVE PROVING
P5.7
PILOT VALVE
COMBUSTION AIR SWITCH
P13.10
P5.4
GAS VALVE 1
P13.11
P5.5
GAS VALVE 2
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
P5.9
VENT VALVE
P5.8
OIL VALVE 1
OIL VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P15.3
VALVE PROVING OPTION
P13.8
P13.7
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
RED
BLACK
UV OPTION NXCESUV
P10.1
P10.2
P5.7
PILOT VALVE
P5.5
GAS VALVE 1
GAS VALVE 2
P5.8
OIL VALVE 1
OIL VALVE 2
48PT2
IR OPTION NXCESIR
OIL VIA DIRECT SPARK VALVE PROVING
P5.4
P5.9
VENT VALVE
BLPS–XXX PRESSURE
+EXC
–COM
STEAM OPTION
P11.2
P11.10
OIL VIA DIRECT SPARK NO VP
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
WATER OPTION
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9

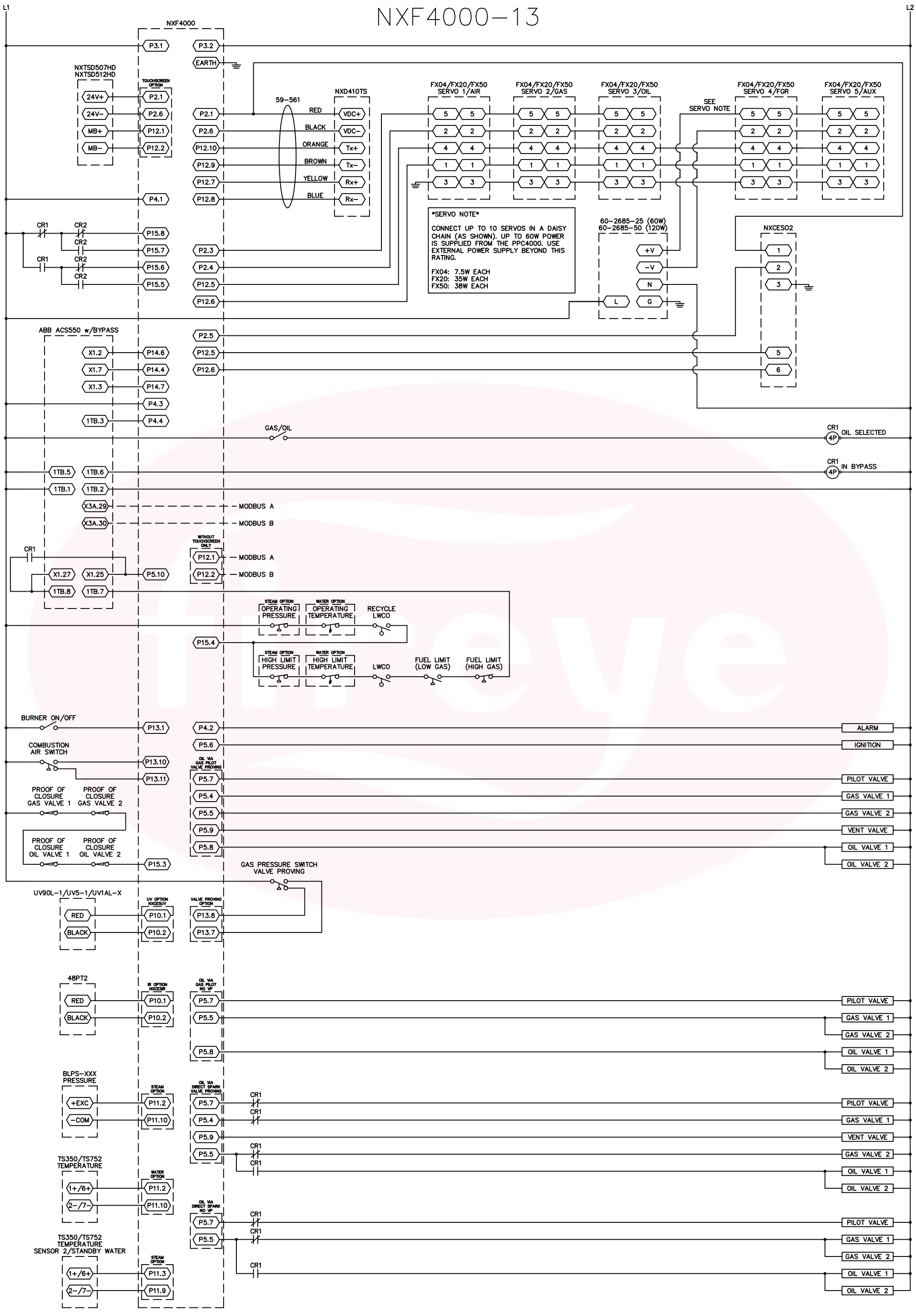
NXF4000–11


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
P4.1
CR1
CR2
P15.8
P15.7
P15.6
P15.5
P2.3
P2.4
P12.5
P12.6
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
NXCES02
1
2
3
ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
P14.6
P14.4
P14.7
P2.5
P12.5
P12.6
5
6
P4.3
1TB.3
P4.4
GAS/OIL
CR1
4P
OIL SELECTED
IN BYPASS
1TB.5
1TB.6
1TB.1
1TB.2
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
X1.27
X1.25
1TB.8
1TB.7
P5.10
STEAM OPTION
WATER OPTION
OPERATING PRESSURE
OPERATING TEMPERATURE
RECYCLE LWCO
P15.4
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
BURNER ON/OFF
P13.1
P4.2
ALARM
COMBUSTION AIR SWITCH
P13.10
P13.11
P5.6
IGNITION
OIL VIA GAS PILOT VALVE PROVING
P5.7
PILOT VALVE
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
P5.4
P5.5
GAS VALVE 1
GAS VALVE 2
P5.9
VENT VALVE
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P5.8
OIL VALVE 1
OIL VALVE 2
P15.3
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
UV OPTION NXCESUV
VALVE PROVING OPTION
RED
BLACK
P10.1
P10.2
P13.8
P13.7
48PT2
IR OPTION NXCESIR
OIL VIA GAS PILOT NO VP
BLPS–XXX PRESSURE
STEAM OPTION
OIL VIA DIRECT SPARK VALVE PROVING
+EXC
–COM
P11.2
P11.10
TS350/TS752 TEMPERATURE
WATER OPTION
1+/6+
2–/7–
OIL VIA DIRECT SPARK NO VP
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9

NXF4000–12


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
14
6
15
7
1
DB15 PLC PORT
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
FX02TRIM–1
FXCES02–X
PG1
PH1
PH2
PH3
PH4
PH5
PG2
PH6
PG3
PH7
PG4
PH8
P4.1
CR1
CR2
P15.8
P15.7
P15.6
P15.5
P2.3
P2.4
P12.5
P12.6
ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
P14.6
P14.4
P14.7
P4.3
1TB.3
P4.4
P2.5
P12.5
P12.6
GAS/OIL
CR1
4P
OIL SELECTED
IN BYPASS
1TB.5
1TB.6
1TB.1
1TB.2
X3A.29
X3A.30
MODBUS A
MODBUS B
WITHOUT TOUCHSCREEN ONLY
P12.1
P12.2
X1.27
X1.25
P5.10
1TB.8
1TB.7
STEAM OPTION
WATER OPTION
OPERATING PRESSURE
OPERATING TEMPERATURE
RECYCLE LWCO
HIGH LIMIT PRESSURE
HIGH LIMIT TEMPERATURE
LWCO
FUEL LIMIT (LOW GAS)
FUEL LIMIT (HIGH GAS)
P15.4
BURNER ON/OFF
P13.1
COMBUSTION AIR SWITCH
P13.10
P13.11
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
P15.3
GAS PRESSURE SWITCH VALVE PROVING
UV90L–1/UV5–1/UV1AL–X
UV OPTION NXCESUV
VALVE PROVING OPTION
P10.1
P10.2
P13.8
P13.7
48PT2
IR OPTION NXCESIR
BLPS–XXX PRESSURE
+EXC
–COM
P11.2
P11.10
TS350/TS752 TEMPERATURE
1+/6+
2–/7–
TS350/TS752 TEMPERATURE SENSOR 2/STANDBY WATER
P11.3
P11.9
OIL VIA GAS PILOT VALVE PROVING
OIL VIA GAS PILOT NO VP
OIL VIA DIRECT SPARK VALVE PROVING
OIL VIA DIRECT SPARK NO VP
P4.2
P5.6
P5.7
P5.4
P5.5
P5.9
P5.8
ALARM
IGNITION
PILOT VALVE
GAS VALVE 1
GAS VALVE 2
VENT VALVE
OIL VALVE 1
OIL VALVE 2

NXF4000–13


L1
L2
NXF4000
P3.1
P3.2
EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
24V+
24V–
MB+
MB–
P2.1
P2.6
P12.1
P12.2
59–561
NXD410TS
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
P2.1
P2.6
P12.10
P12.9
P12.7
P12.8
FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
NXCES02
P4.1
CR1
CR2
P15.8
P15.7
P15.6
P15.5
P2.3
P2.4
P12.5
P12.6
ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
P14.6
P14.4
P14.7
P2.5
P12.5
P12.6
1
2
3
5
6
P4.3
1TB.3
P4.4
GAS/OIL
CR1
4P
OIL SELECTED
IN BYPASS
1TB.5
1TB.6
1TB.1
1TB.2
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BURNER ON/OFF
COMBUSTION AIR SWITCH
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ALARM
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PILOT VALVE
GAS VALVE 1
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OIL VALVE 1
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OIL VIA GAS PILOT VALVE PROVING
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
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UV90L–1/UV5–1/UV1AL–X
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VALVE PROVING OPTION
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BLPS–XXX PRESSURE
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+EXC
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1+/6+
2–/7–
OIL VIA DIRECT SPARK NO VP
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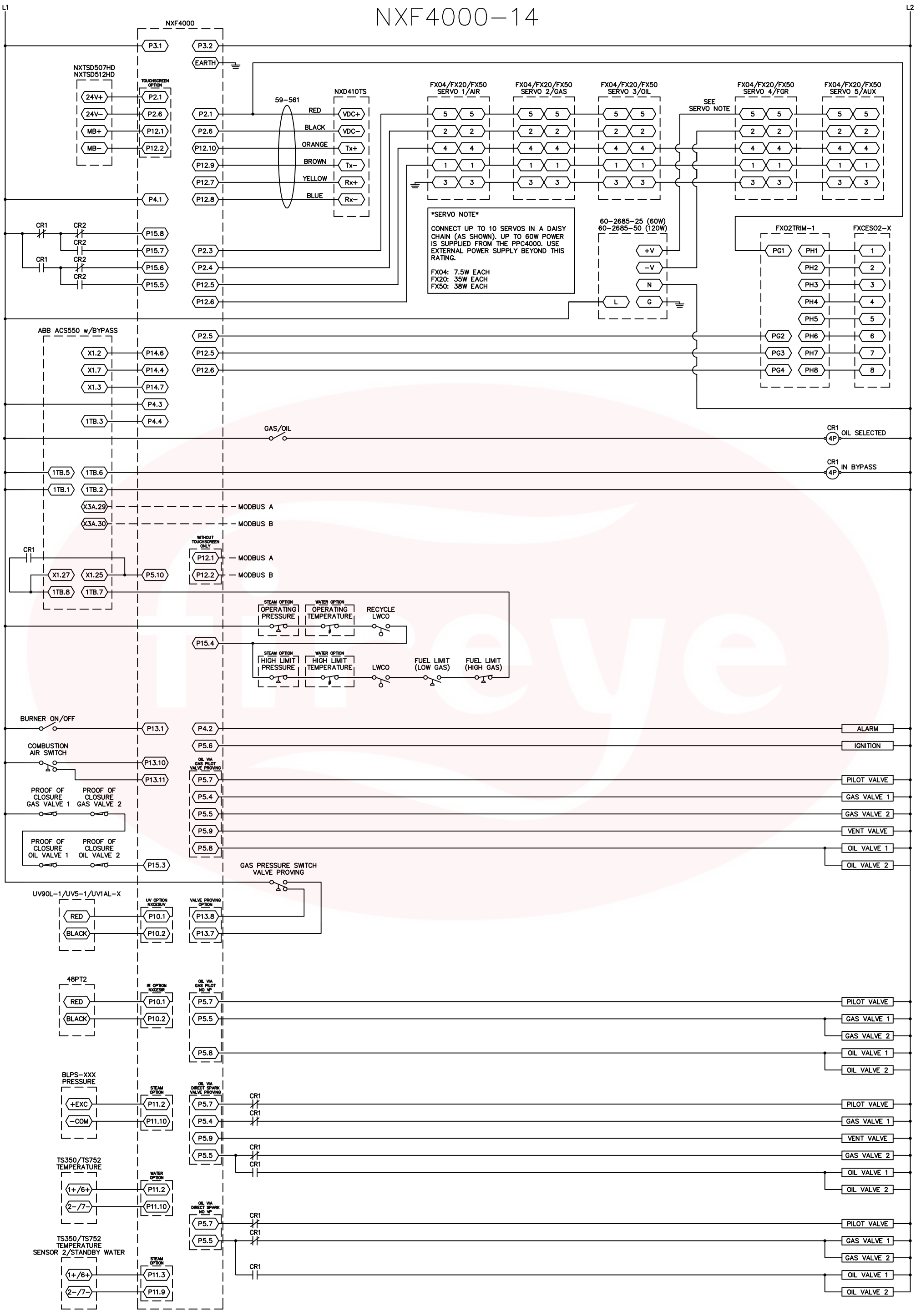
NXF4000–14
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L2
NXF4000
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EARTH
NXTSD507HD
NXTSD512HD
TOUCHSCREEN OPTION
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24V–
MB+
MB–
P2.1
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59–561
NXD410TS
RED
BLACK
ORANGE
BROWN
YELLOW
BLUE
VDC+
VDC–
Tx+
Tx–
Rx+
Rx–
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FX04/FX20/FX50 SERVO 1/AIR
FX04/FX20/FX50 SERVO 2/GAS
FX04/FX20/FX50 SERVO 3/OIL
SEE SERVO NOTE
FX04/FX20/FX50 SERVO 4/FGR
FX04/FX20/FX50 SERVO 5/AUX
SERVO NOTE
CONNECT UP TO 10 SERVOS IN A DAISY CHAIN (AS SHOWN). UP TO 60W POWER IS SUPPLIED FROM THE PPC4000. USE EXTERNAL POWER SUPPLY BEYOND THIS RATING.
FX04: 7.5W EACH
FX20: 35W EACH
FX50: 38W EACH
60–2685–25 (60W)
60–2685–50 (120W)
+V
–V
N
L
G
FX02TRIM–1
FXCES02–X
PG1
PG2
PG3
PG4
PH1
PH2
PH3
PH4
PH5
PH6
PH7
PH8
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CR1
CR2
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P15.6
P15.5
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P2.4
P12.5
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ABB ACS550 w/BYPASS
X1.2
X1.7
X1.3
P14.6
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P14.7
P4.3
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1TB.3
P2.5
P12.5
P12.6
GAS/OIL
CR1 4P OIL SELECTED
CR1 4P IN BYPASS
1TB.5
1TB.6
1TB.1
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X3A.30
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PILOT VALVE
PROOF OF CLOSURE GAS VALVE 1
PROOF OF CLOSURE GAS VALVE 2
P5.4
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GAS VALVE 2
P5.9
VENT VALVE
PROOF OF CLOSURE OIL VALVE 1
PROOF OF CLOSURE OIL VALVE 2
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