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Note
 1. This drawing is drawn based on 8 cylinder.
 2. Remark will be applied as following:
 *** only for GUV
 **** only for IGPR
 ***** only for E21/22 (auxiliary blower starter with frequency converter)

Colour Code
 Bus
 Speed
 Diesel
 Gas

E95

E99

E25

LDU-20

LDU-20 (EOR)

MCM-11

E90

ION-10

CCM-20 G1 Cylinder #1

CCM-20 G2 Cylinder #2

CCM-20 G3 Cylinder #3

CCM-20 G4 Cylinder #4

CCM-20 G5 Cylinder #5

CCM-20 G6 Cylinder #6

CCM-20 G7 Cylinder #7

CCM-20 G8 Cylinder #8

CCM-20 A1 Cylinder #1

CCM-20 A2 Cylinder #2

CCM-20 A3 Cylinder #3

CCM-20 A4 Cylinder #4

CCM-20 A5 Cylinder #5

CCM-20 A6 Cylinder #6

CCM-20 A7 Cylinder #7

CCM-20 A8 Cylinder #8

System Bus 1+2

Gear Wheel Sensor A+B

PT3463C Pkct Fuel Press. A

TE3464C Pkct Fuel Temp. Inlet

PT3464C Pkct Fuel Press. Inlet

PT3697C Gas Pressure Exh. Side

PT3695C Gas Pressure Fuel Side

STS202C Turbochg. Speed TC #2

*****XS5076C Shaft Lock Dev. Eng. 2****

JS5032C Aux Blow #2 running

PT5017C Turn. Gear diseng #2

PT4302C Starting Air Press. #2 bef. Shut-Off Vlv

TE4046C Scav. Air Temp. after Cooler B

TE4045C Scav. Air Temp. after Cooler A

PT4044C Scav. Air Press. In Air Rec. #2

TE4042C TC Air Temp. before Inlet B

TE4041C TC Air Temp. before Inlet A

PT4003C Barometric Press. B

PT4002C Barometric Press. A

PT1101C Cyl. Cool. Water Press. Inl. Eng.

CV7077C Exh. Waste Gate Ctrl. Vlv

CV7032C Aux Blow #2 Start

CV7014C Common Start Vlv #2

CV7233C Fuel Pump Act. #3 Pos Setp

CV7222C Serv Oil Pump Actr. #2

XS3465C Pilot Fuel Pump On

PT2072C Servo Oil Press #2

PT4341C Air Spring Air Press

CV7233C Fuel Pump Act. #2 Pos Setp

PT2071C Servo Oil Press #1

PT2002 Cbrng. Oil Press. Inl. Eng.

Supply Gear Wheel Sensor D

CV7221C Serv Oil Pump Actr. #1

PT3462C Fuel Rail Press #2

PT3421C Fuel Press. before SU

Supply Gear Wheel Sensor C-BDC

CV7222C Fuel Pump Act. #2 Pos Setp

PT3461C Fuel Rail Press #1

JTS156C Power Input

Supply Gear Wheel Sensor B-TDC

CV7231C Fuel Pump Act. #1 Pos Setp

Supply Gear Wheel Sensor A+B

STS153/152C Gear Wheel Sensor A+B

STS153/154C Gear Wheel Sensor C-D

ZS5124C BDC Signal

ZS5123C TDC Signal

AE3315C Gas Conc. Piston under side

CV7292C Gas Shut. Off Exh. Side

CV7293C Pilot Fuel Press Ctrl Vlv

CV7289C Gas Shut. Off Fuel Side

CV7288C Vent. Vlv Engine Inlet

CV7296C GAV Lub Oil Shut. Off

CV7287C Vent. Vlv Exh. Side

CV7286C Vent. Vlv Fuel Side

CV7147C Cyl. Lub. Oil BN Change Vlv

PT4413C Ctrl. Air Press. Alt Ch-over Vlv

PT3146C Cyl. Lub. Oil Pressure High BN

PT3145C Cyl. Lub. Oil Pressure Low BN

PT2011C X-head Brg. Oil Press. Supply

XS4111C HFO Supply

PT4031C Scav. Air Press. In Air Rec. #1

PT4301C Starting Air Press. #1 bef. Shut. Off Vlv

PT4031C Common Start Vlv #1

CV7031C Aux. Blow #1 Start

*****CV708677C Aux. Blow #1/2 Speed Setp**

ZS5016C Turn. Gear diseng #1

ZS5018C Starting Air Shut. Off Man. Crased

JS5031C Aux. Blow #1 running

ST5011C Turbochg. Speed TC #1

*****XS5075C Shaft Lock Dev. Eng. 1**

XI7077C Exh. Waste Gate Pos

XS3695C Serv. Oil Sensor Pump On

CV7003C Injector Lub. Oil Vlv

CV7031C Common Start Vlv #1

CV7031C Aux. Blow #1 Start

*****CV708677C Aux. Blow #1/2 Speed Setp**

Supply Gear Wheel Sensor A

System Bus 1+2

Gear Wheel Sensor A+B

PT3463C Pkct Fuel Press. A

TE3464C Pkct Fuel Temp. Inlet

PT3464C Pkct Fuel Press. Inlet

PT3697C Gas Pressure Exh. Side

PT3695C Gas Pressure Fuel Side

STS202C Turbochg. Speed TC #2

*****XS5076C Shaft Lock Dev. Eng. 2****

JS5032C Aux Blow #2 running

PT5017C Turn. Gear diseng #2

PT4302C Starting Air Press. #2 bef. Shut-Off Vlv

TE4046C Scav. Air Temp. after Cooler B

TE4045C Scav. Air Temp. after Cooler A

PT4044C Scav. Air Press. In Air Rec. #2

TE4042C TC Air Temp. before Inlet B

TE4041C TC Air Temp. before Inlet A

PT4003C Barometric Press. B

PT4002C Barometric Press. A

PT1101C Cyl. Cool. Water Press. Inl. Eng.

CV7077C Exh. Waste Gate Ctrl. Vlv

CV7032C Aux Blow #2 Start

CV7014C Common Start Vlv #2

CV7233C Fuel Pump Act. #3 Pos Setp

CV7222C Serv Oil Pump Actr. #2

XS3465C Pilot Fuel Pump On

PT2072C Servo Oil Press #2

PT4341C Air Spring Air Press

CV7233C Fuel Pump Act. #2 Pos Setp

PT2071C Servo Oil Press #1

PT2002 Cbrng. Oil Press. Inl. Eng.

Supply Gear Wheel Sensor D

CV7221C Serv Oil Pump Actr. #1

PT3462C Fuel Rail Press #2

PT3421C Fuel Press. before SU

Supply Gear Wheel Sensor C-BDC

CV7222C Fuel Pump Act. #2 Pos Setp

PT3461C Fuel Rail Press #1

JTS156C Power Input

Supply Gear Wheel Sensor B-TDC

CV7231C Fuel Pump Act. #1 Pos Setp

Supply Gear Wheel Sensor A+B

STS153/152C Gear Wheel Sensor A+B

STS153/154C Gear Wheel Sensor C-D

ZS5124C BDC Signal

ZS5123C TDC Signal

AE3315C Gas Conc. Piston under side

CV7292C Gas Shut. Off Exh. Side

CV7293C Pilot Fuel Press Ctrl Vlv

CV7289C Gas Shut. Off Fuel Side

CV7288C Vent. Vlv Engine Inlet

CV7296C GAV Lub Oil Shut. Off

CV7287C Vent. Vlv Exh. Side

CV7286C Vent. Vlv Fuel Side

CV7147C Cyl. Lub. Oil BN Change Vlv

PT4413C Ctrl. Air Press. Alt Ch-over Vlv

PT3146C Cyl. Lub. Oil Pressure High BN

PT3145C Cyl. Lub. Oil Pressure Low BN

PT2011C X-head Brg. Oil Press. Supply

XS4111C HFO Supply

PT4031C Scav. Air Press. In Air Rec. #1

PT4301C Starting Air Press. #1 bef. Shut. Off Vlv

PT4031C Common Start Vlv #1

CV7031C Aux. Blow #1 Start

*****CV708677C Aux. Blow #1/2 Speed Setp**

ZS5016C Turn. Gear diseng #1

ZS5018C Starting Air Shut. Off Man. Crased

JS5031C Aux. Blow #1 running

ST5011C Turbochg. Speed TC #1

*****XS5075C Shaft Lock Dev. Eng. 1**

XI7077C Exh. Waste Gate Pos

XS3695C Serv. Oil Sensor Pump On

CV7003C Injector Lub. Oil Vlv

CV7031C Common Start Vlv #1

CV7031C Aux. Blow #1 Start

*****CV708677C Aux. Blow #1/2 Speed Setp**

Supply Gear Wheel Sensor A

System Bus 1+2

Gear Wheel Sensor A+B

PT3463C Pkct Fuel Press. A

TE3464C Pkct Fuel Temp. Inlet

PT3464C Pkct Fuel Press. Inlet

PT3697C Gas Pressure Exh. Side

PT3695C Gas Pressure Fuel Side

STS202C Turbochg. Speed TC #2

*****XS5076C Shaft Lock Dev. Eng. 2****

JS5032C Aux Blow #2 running

PT5017C Turn. Gear diseng #2

PT4302C Starting Air Press. #2 bef. Shut-Off Vlv

TE4046C Scav. Air Temp. after Cooler B

TE4045C Scav. Air Temp. after Cooler A

PT4044C Scav. Air Press. In Air Rec. #2

TE4042C TC Air Temp. before Inlet B

TE4041C TC Air Temp. before Inlet A

PT4003C Barometric Press. B

PT4002C Barometric Press. A

PT1101C Cyl. Cool. Water Press. Inl. Eng.

CV7077C Exh. Waste Gate Ctrl. Vlv

CV7032C Aux Blow #2 Start

CV7014C Common Start Vlv #2

CV7233C Fuel Pump Act. #3 Pos Setp

CV7222C Serv Oil Pump Actr. #2

XS3465C Pilot Fuel Pump On

PT2072C Servo Oil Press #2

PT4341C Air Spring Air Press

CV7233C Fuel Pump Act. #2 Pos Setp

PT2071C Servo Oil Press #1

PT2002 Cbrng. Oil Press. Inl. Eng.

Supply Gear Wheel Sensor D

CV7221C Serv Oil Pump Actr. #1

PT3462C Fuel Rail Press #2

PT3421C Fuel Press. before SU

Supply Gear Wheel Sensor C-BDC

CV7222C Fuel Pump Act. #2 Pos Setp

PT3461C Fuel Rail Press #1

JTS156C Power Input

Supply Gear Wheel Sensor B-TDC

CV7231C Fuel Pump Act. #1 Pos Setp

Supply Gear Wheel Sensor A+B

STS153/152C Gear Wheel Sensor A+B

STS153/154C Gear Wheel Sensor C-D

ZS5124C BDC Signal

ZS5123C TDC Signal

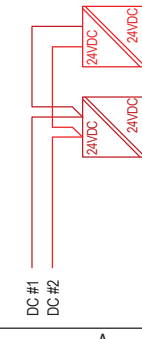
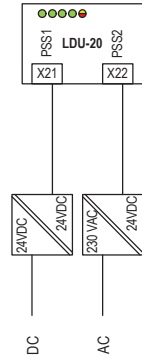
AE3315C Gas Conc. Piston under side

CV7292C Gas Shut. Off Exh. Side

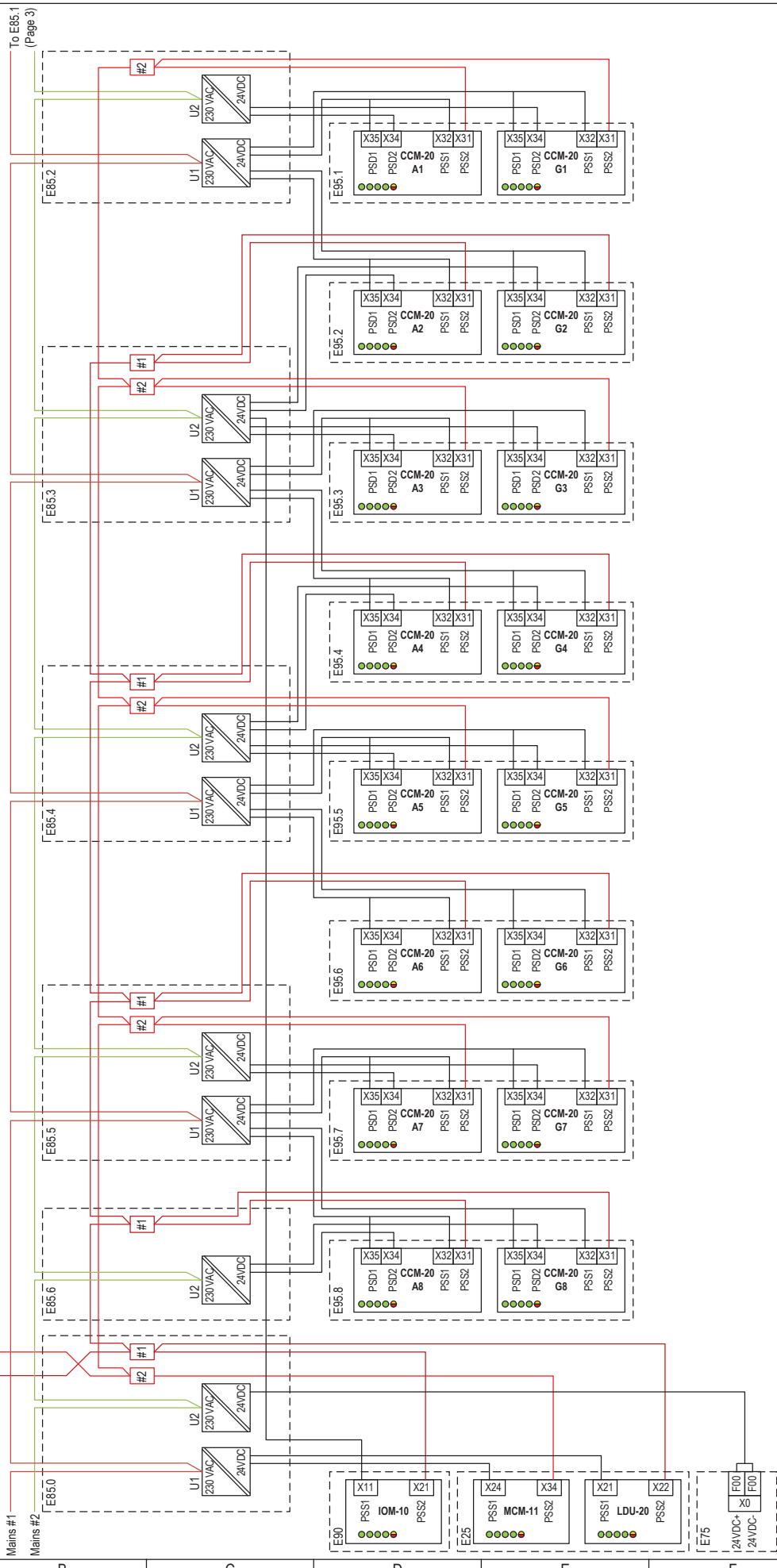
CV7293C Pilot Fuel Press Ctrl Vlv

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Note
 1. Output voltage must not exceed the output voltage of AC/DC converters.
 2. Adjust to 23.5 - 24VDC
 No of CCM-20 ≤ 16 pcs: PULS CDS.241



Engine Control Room
 Engine



0	1	2	3	4	5	6	7	8	9
Electric Connection Diagram System Layout for Dual Fuel Engines									
WING D Winterthur Gas & Diesel									
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A

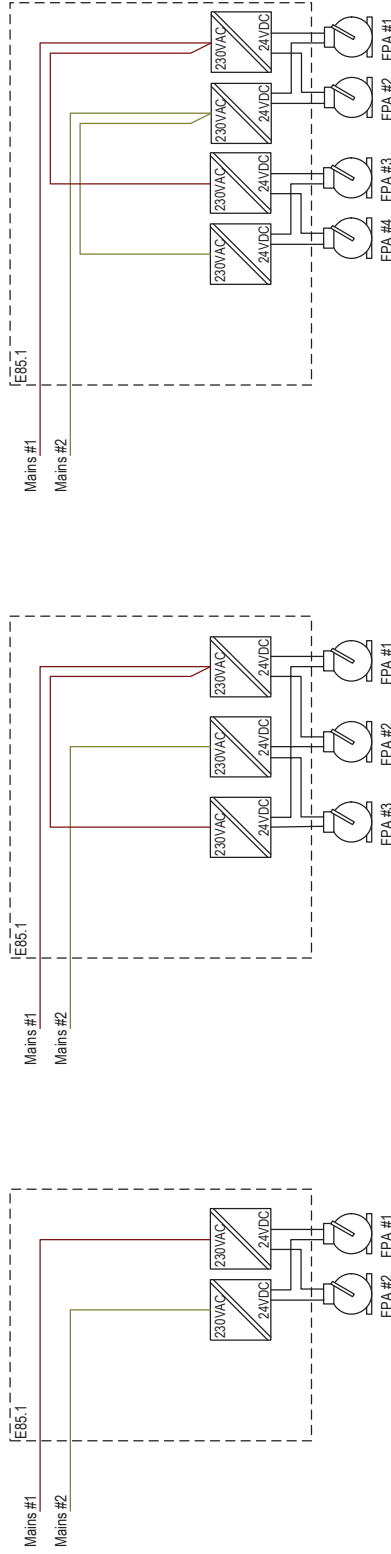
B

C

D

E

F



0

1

2

3

4

5

6

7

8

9

Electric Connection Diagram
System Layout for Dual Fuel Engines

WINGD
Winterthur Gas & Diesel

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CCM-20 Common connections Diesel Part

