

# GRUNDFOS



GRUNDFOS  
Poul Due Jensens Vej 7  
DK-8850 Bjerringbro, Denmark

## Wiring Diagram

Application: Pump Control

Product: LC 241 1x8-32A DOL 3x208/230/460 PO

Product number: 99612801

Rated voltage: 208/230/460 VAC

Rated operational voltage: 208/230/460 VAC

Rated current: 32 A

Rated current of auxiliary circuit: 0.5 A

Rated frequency: 60 Hz

Pollution degree:

Earthing scheme:

Type of installation: Stationary assembly for indoor/outdoor installation

Degree of protection: 4X

Electromagnetic compatibility:

Ambient Temperature: -4F (-20C) : 104F (40C)

Number of pumps: 1

Rated current, main pump: 32 A

Starting method, main pump: DOL

Rated conditional short-circuit current: 10 kA

Dimensions (WxHxD): 16.26x20.1x8.38 Inch

Caution: Line Terminals of variable-speed-controlled motors may have dangerous voltages even though the motor is stopped.

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Date	12/4/2018
Drafter	JS
Approved	BK
Revision	005

LC 241 1x8-32A DOL 3x208/230/460 PO

99612801

Replacement of

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Cover Sheet

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# Feeder Circuit Protection:

Largest Motor FLA and  
Panel Maximum FLA:

**Feeder Circuit Protection to be Provided by Installer.  
Type and Size to be based upon Local, State, and  
National Electrical Codes.**

**SCCR Rating: 10 kA**

Motor Horsepower	
Motor FLA	32 A
Panel Max FLA	32.5 A

## Field Installed Options Wiring Requirements

Digital Inputs	20 to 14AWG 600V Copper Wire
Analog Inputs	20 to 14AWG 2 wire Shielded Cable
Digital Outputs (Dry Contacts)	20 to 14AWG 600V Copper Wire

## Wiring Sizes & Wiring Technical Characteristics

All Wire is 600V MTW Copper Wire

Main Disconnect Switch to Power Distribution Block: 2/0AWG ... 10AWG based on Panel FLA

Motor Supply Wire from Q1 .. Q4: 8AWG .. 14AWG based on FLA of Motor

A-Y-B Cable for GENIbus connection: 3 x 18AWG 600V Shielded Cable

## Wire Color

BLU	+12/24VDC Power	BLUE
BLU/WHT	-12/24VDC Power	Blue/White
BLK	115VAC Primary Power	Black
WHT	115VAC Neutral	White
GRN/YEL	Ground/PE	Green/Yellow
ORG	Analog Inputs	Orange
ORG	Analog Outputs	Orange
PUR	Digital Inputs	Purple
PUR/WHT	Grounded for Digital Input	Purple/White
YEL	Digital Output	Yellow
BRN	All Other Wiring	Brown

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LC 241 1x8-32A DOL 3x208/230/460 PO

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General Information

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Branch Circuit Protection Device/Disconnect Means  
Field Provided - Size per manufacturing specifications  
for Pump/Motor

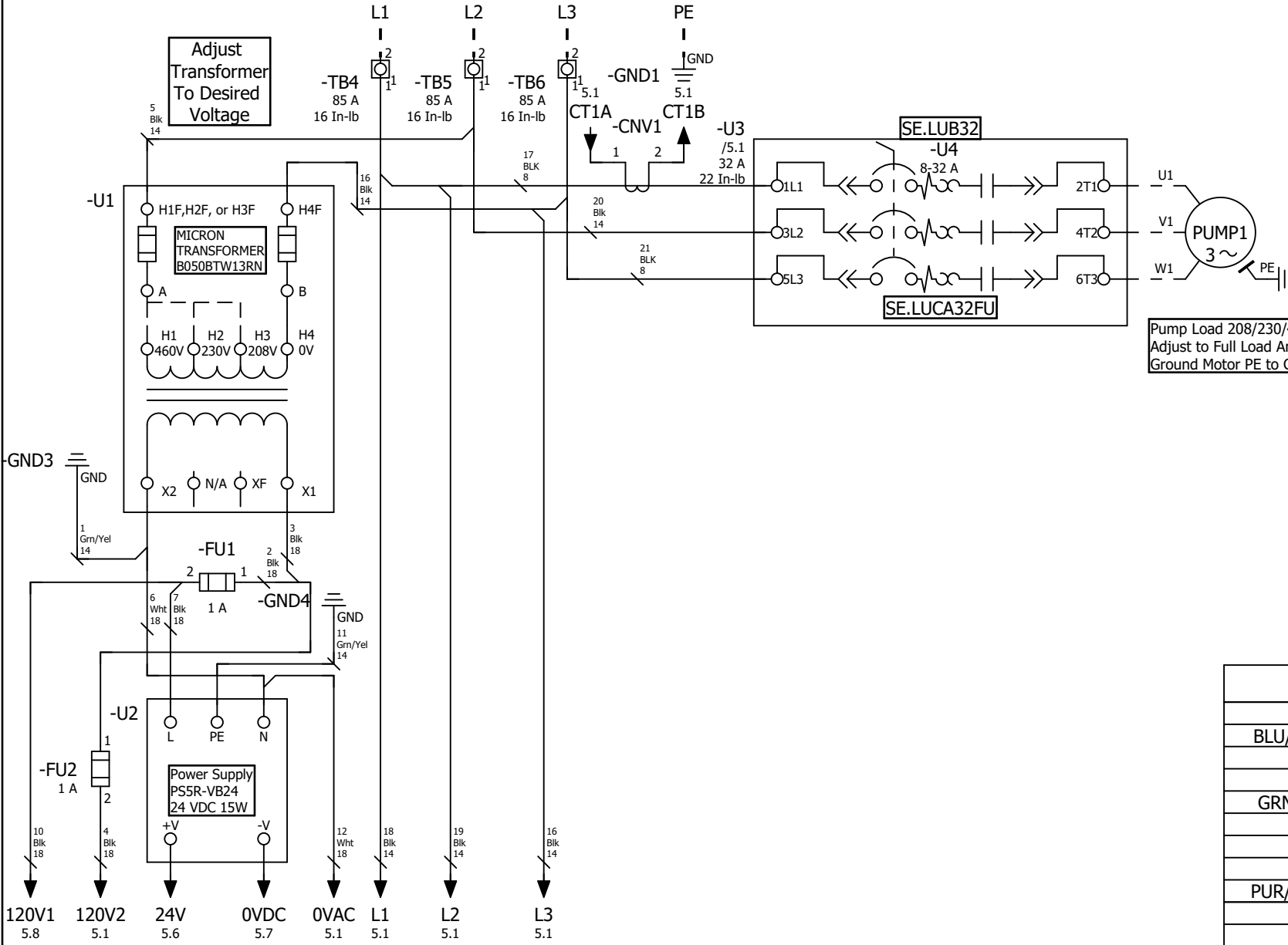
FU1 & FU2 FUSE MUST BE REPLACED WITH  
1 AMP 5mmx20mm FAST ACTING 250V MAX

# Legend

---	Field Wiring
.....	Field Supplied
SW1	Test/Silence
LT	Beacon
B	Buzzer
CR	Control Relay
GND	Ground Lug
TB	Terminal Block
PLC	Grundfos PLC
U1	Power Supply
U2	Power Supply
U3-U5	Lub Starter
HMI	HMI Interface

Power: 208/230/460 VAC 60 Hz

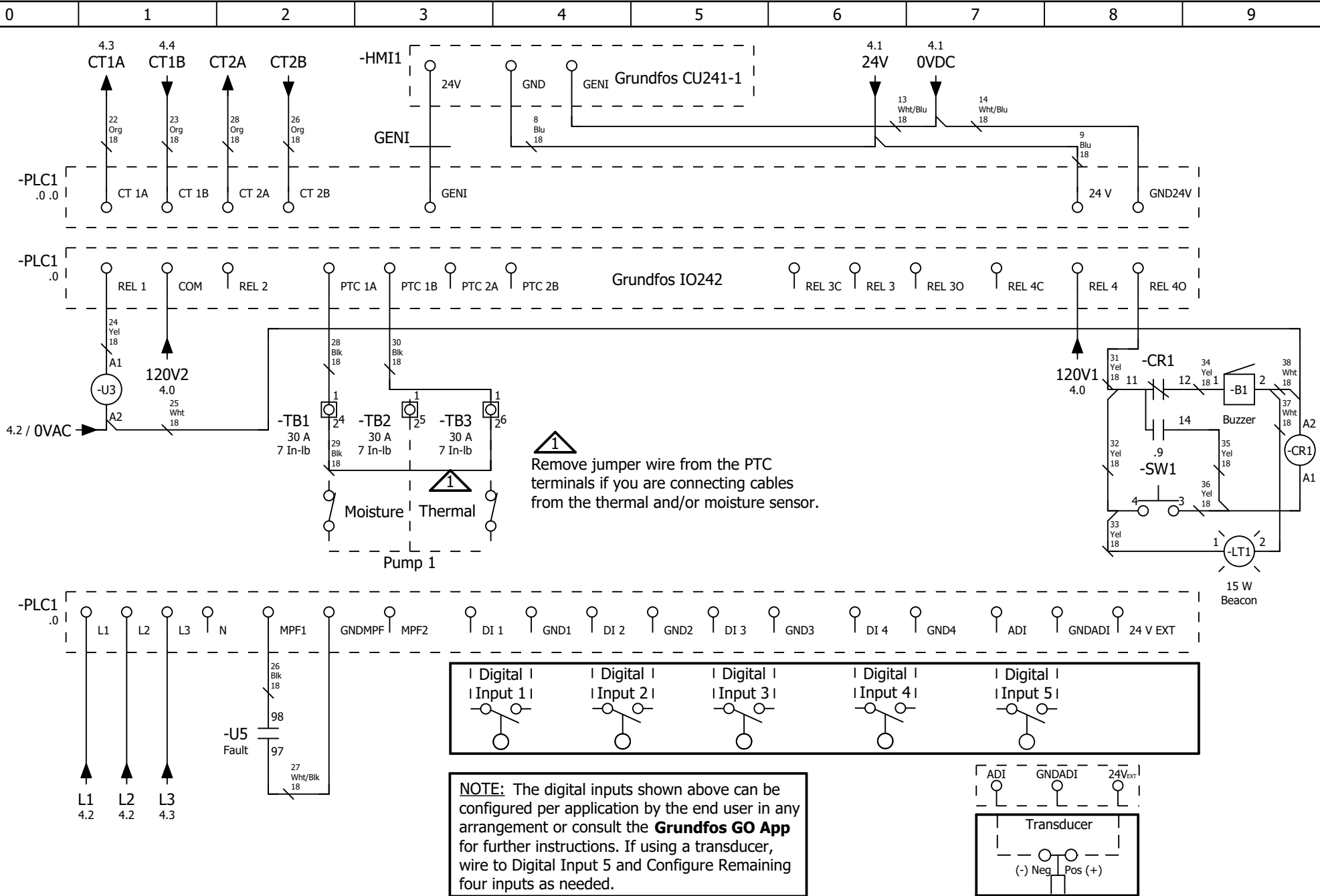
Adjust  
Transformer  
To Desired  
Voltage



Pump Load 208/230/460 VAC 60 Hz 8-32 A  
Adjust to Full Load Amperes of Motor  
Ground Motor PE to Ground Lug

Wire Color	
BLU	+12/24VDC Power
BLU/WHT	-12/24VDC Power
BLK	115VAC Primary Power
WHT	115VAC Neutral
GRN/YEL	Ground/PE
ORG	Analog Inputs
ORG	Analog Outputs
PUR	Digital Inputs
PUR/WHT	Grounded for Digital Input
YEL	Digital Output
BRN	All Other Wiring

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# Summarized Parts List

Device Tag	Quantity	Length (In)	Part Description	ERP #	Manufacturer	Part Number
-1	1		Pilot, Pushbutton Operator		Schneider Electric	ZB4BA2
-2	1		Collar, Pilot		Schneider Electric	ZB4BZ009
-3	1		Label, Grundfos Panel, 250mm		SMT Graphics	1002608
-6	1		Phase Seperator Lub		Schneider Electric	LU9SP0
-7...-10;-12;-13;-15	9		Din Rail, End Stop		IDEC	BNL-5
-11	1		Block, End Barrier,30/50/65A,SE		Schneider Electric	NSYTRAC22
-116	1		Bracket ,Standoff, DaYu,3P,LUB		Alderon	1002607
-117	1		Block, End Barrier, 85A, SE		Schneider Electric	NSYTRAC162
-B1	1		Buzzer,120V,Warble,95DB		Ingram	PB-120A
-BP2	1		Inner Door, DaYu, 16"x14"Simplex		Alderon	1002600
-BP3	1		Backplate, Grundfos, DaYu, 16X14		Alderon Industries	1003899
-CNV1	1		Transformer Current, SIRIO, 152035		SIRIO	DT152035-2303
-CR1	1		Relay, S.E. Int, MF, 120V, SPDT		Schneider Electric	RXG11F7
-CR1	1		Relay SE, 1 Pole Socket		Schneider Electric	RGZE1S35M
-CR1	1		Relay, S.E. Int, Label Plate		Schneider Electric	RSZL300
-DIN1;-DIN2	2	12.521	Rail Din, Steel, Low		Wago	210-112
-ENCL1	1		Enclosure, Integra, Premium, 16x14x7		Integra Enclosures	H161407HLL
-FU1;-FU2	2		Terminal box Fuse, SE		Schneider Electric	NSYTRV42SF5
-FU1;-FU2	4		Fuse, 5mm X 20mm, 1A		Littlefuse	F2677-ND
-FU4;-FU5	2		Fuse, Primary, FNQR, 0.5A		Bussmann	FNQR-1/2
-GND1	1		Lug, Ground		Burndy	KA6U
-HMI1	1		HMI, CU241-1 Grundfos		Grundfos	CU241-1
-LT1	1		Beacon, 15W, One Hole, Red		AC/DC	R15-MB
- PARTS	1		Enclosure , Inner Door Hinge Kit		Integra Enclosures	USOPK-G
- PARTS	1		Connect Cable, Grundfos Genie		Grundfos	1003520
- PARTS	1		Label, Grundfos, DaYu, 1Pump		SMT Graphics	1002906
- PARTS	1		Label, Grundfos, DaYu, TB, S32A, 460V		SMT Graphics	1002938
- PARTS	1		Kit, Label ,Grundfos, DaYu, Alm, P1, P2		SMT Graphics	1002905
- PARTS	2		Label , Laminated Schematics		Alderon	1001997
- PARTS	1		Label Ratings		AWT Labels &	1003595
- PARTS	1		Label Conduit		AWT Labels &	1000122
- PARTS	1		I and O instructions , Print Package			1003594
- PARTS	12		Screw Phillips ,6x1/2, Self Drill		B & F Fastener Supply	PTEKF2 006 0050 PH
- PARTS	8		Screw Phillips, 6x3/4, Self Drill		B & F Fastener Supply	D6-075PSDZ
- PARTS	8		Screw Hex, 8x1/2, Self Drill		B & F Fastener Supply	HTEKF2 008 0050
- PARTS	2		Screw Pan,10-32x1/2,Phillip,TC		B & F Fastener Supply	PTCSF 102 0050 PH
- PARTS	1		Label UL 508, USA and Canada		Underwriters	508-S1844
- PARTS	1		Carton, 26 x 20 x 14		U-Line	S-18371
-PLC1	1		IO242 Basic		Grundfos	IO242
-SW1	1		Contact Block Pilot, NO		Schneider Electric	ZBE1015
-TB1...-TB3	3		Terminal Block 30A, SE		Schneider Electric	NSYTRV42
-TB4...-TB6	3		Terminal Block 85A, SE		Schneider Electric	NSYTRV162
-U1	1		Transformer 50VA,208/230/460:120		Micron	B050MBT13RN

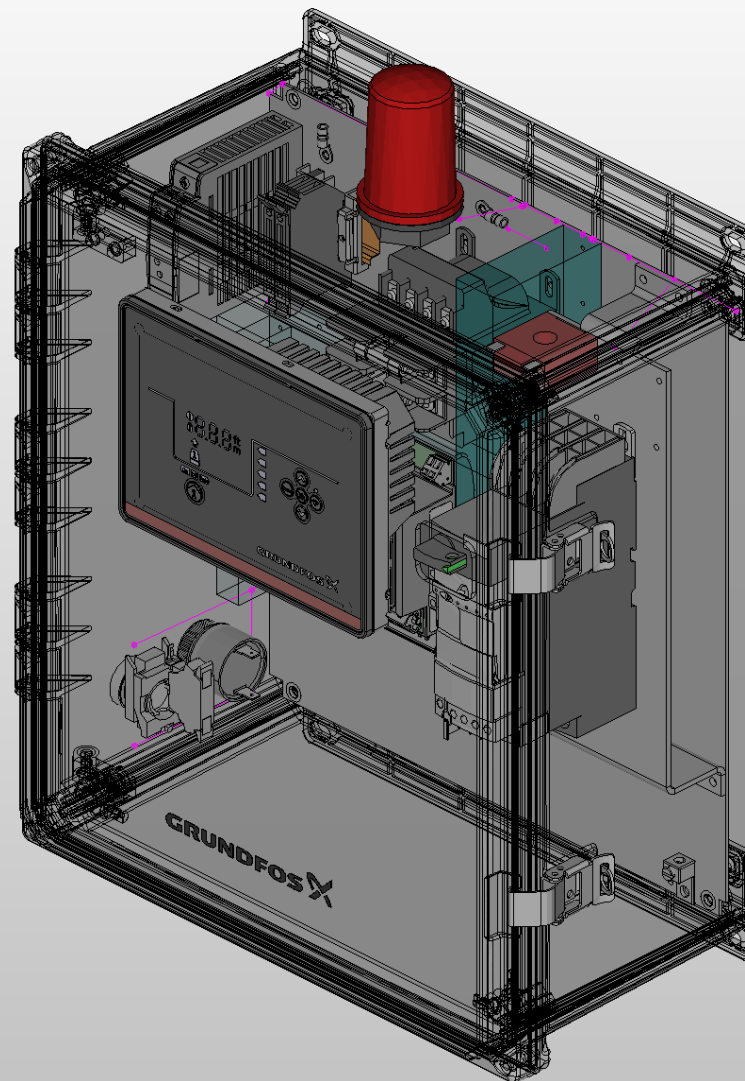
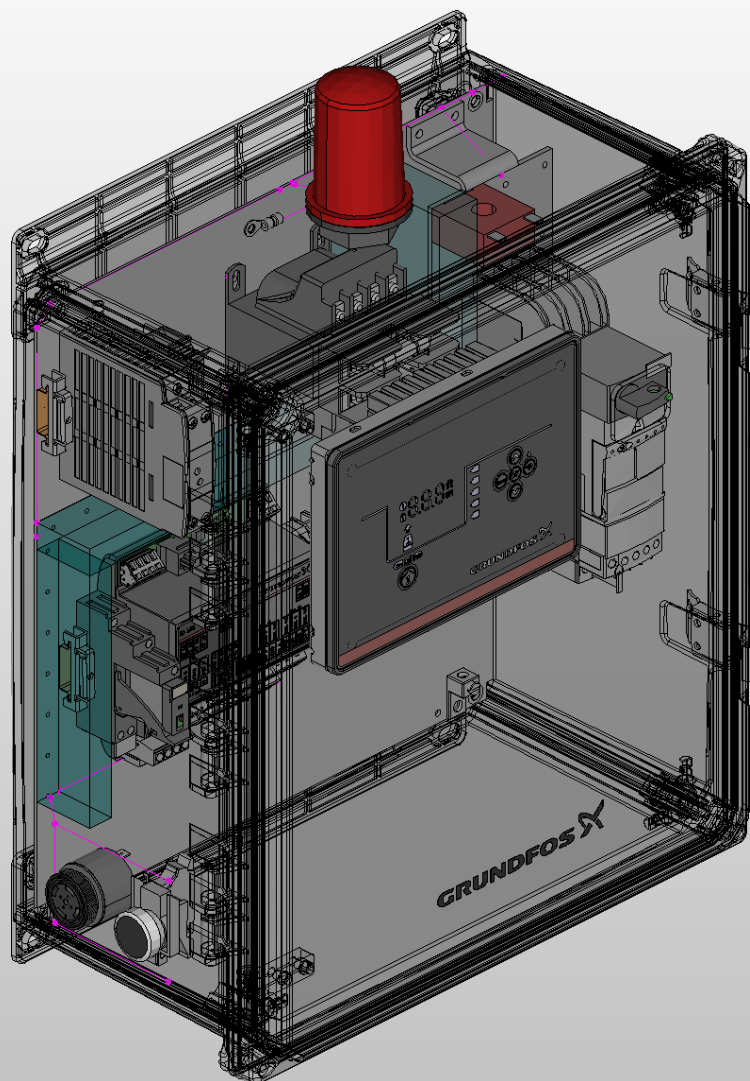
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# Summarized Parts List

Device Tag	Quantity	Length (In)	Part Description	ERP #	Manufacturer	Part Number
-U2	1		Power Supply, IDEC, 24 VDC,15W		IDEC	PS5R-VB24
-U3	1		Motor Starter, Tele, LUB32		Schneider Electric	LUB32
-U4	1		Motor Starter Overload,LUCA32, 8-32A		Schneider Electric	LUCA32FU
-U5	1		Motor Starter Tele, Aux. Cont, LU		Schneider Electric	LUA1C20
-WD1;-WD3	2	14.771	Duct, Wire, 0.5" x 1.5", WHT		Canalplast	L0515G
-WD4	1	5.731	Duct, Wire, 1" x 3", WHT		Canalplast	H13W

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Enclosure

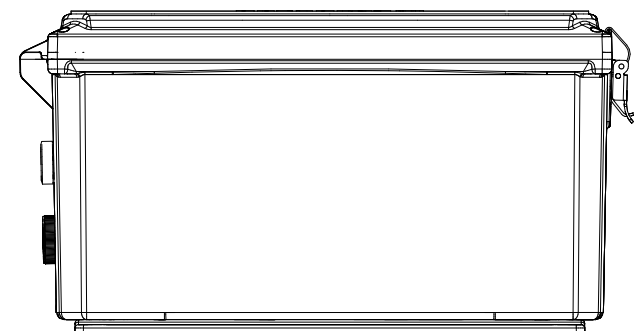
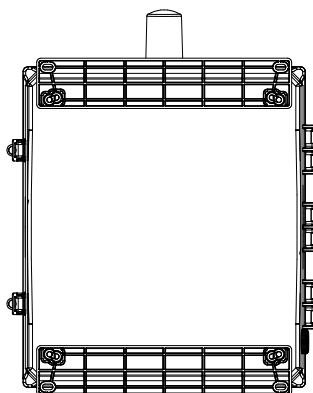
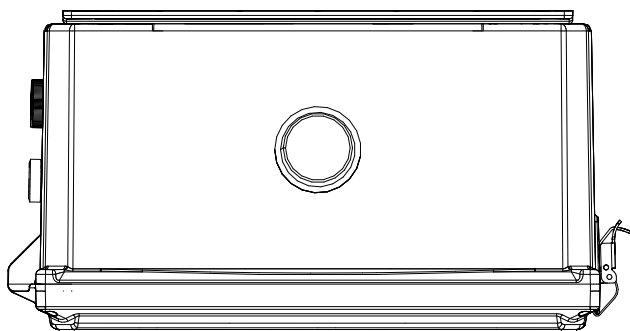
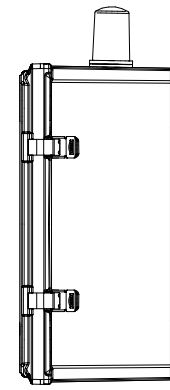
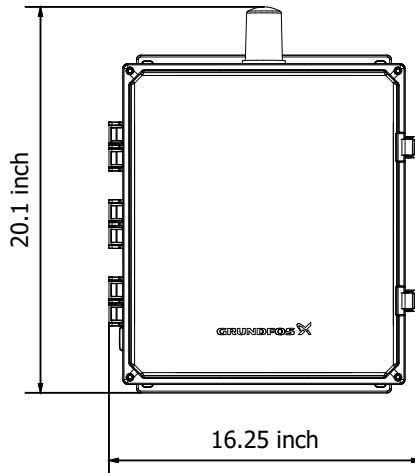
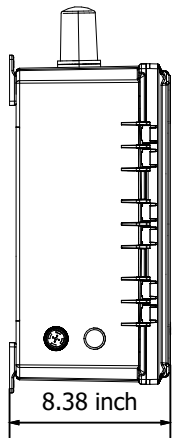
Enclosure

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Enclosure Perspective

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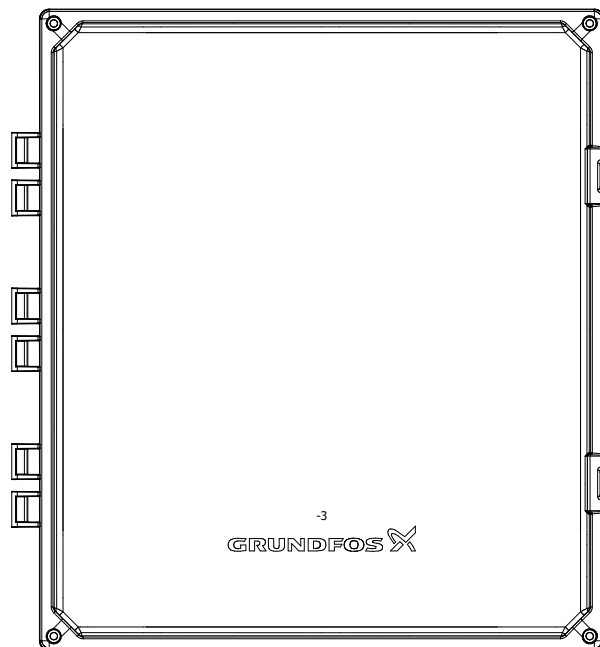
Change Note

Date

Name

# Enclosure legend

Device tag	Description
ENCL1	
3	Label, Grundfos Panel, 250mm



Door Layout

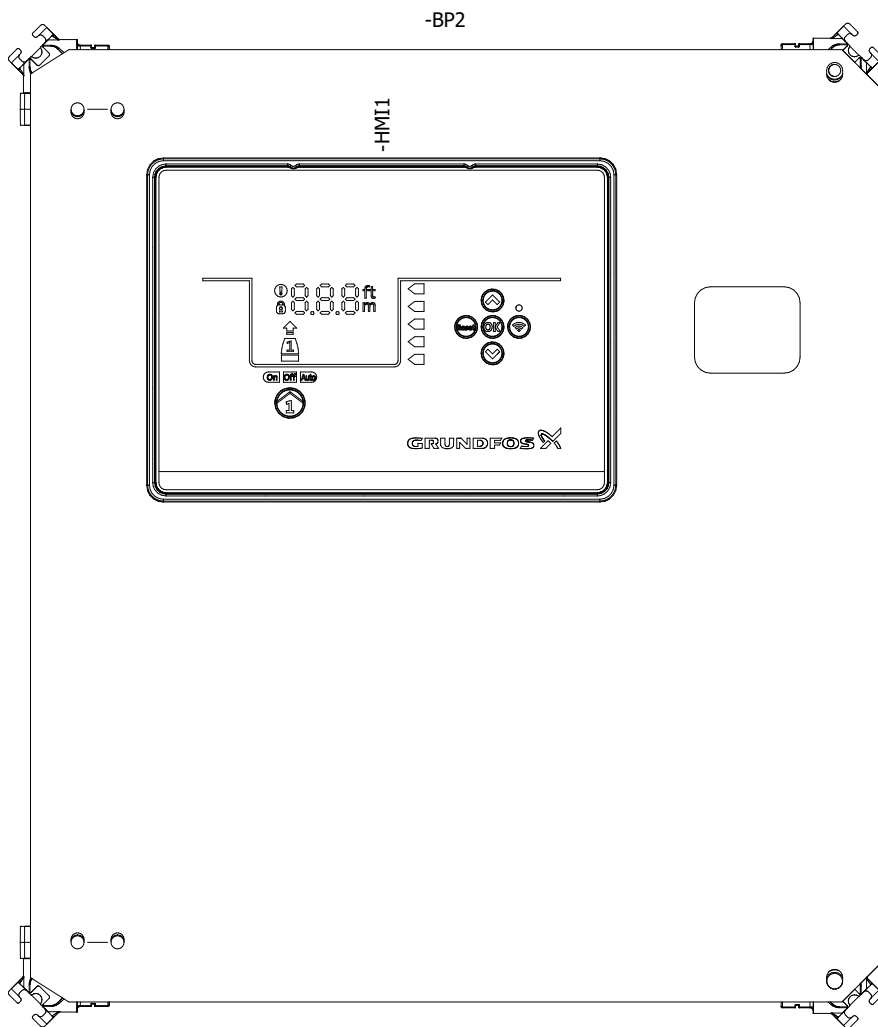
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# Enclosure legend

Device tag	Description
BP2	Inner Door, DaYu, 16"x14" Simplex
HMI1	HMI, CU241-1 Grundfos



Mounting Panel Layout

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Mounting Panel Layout

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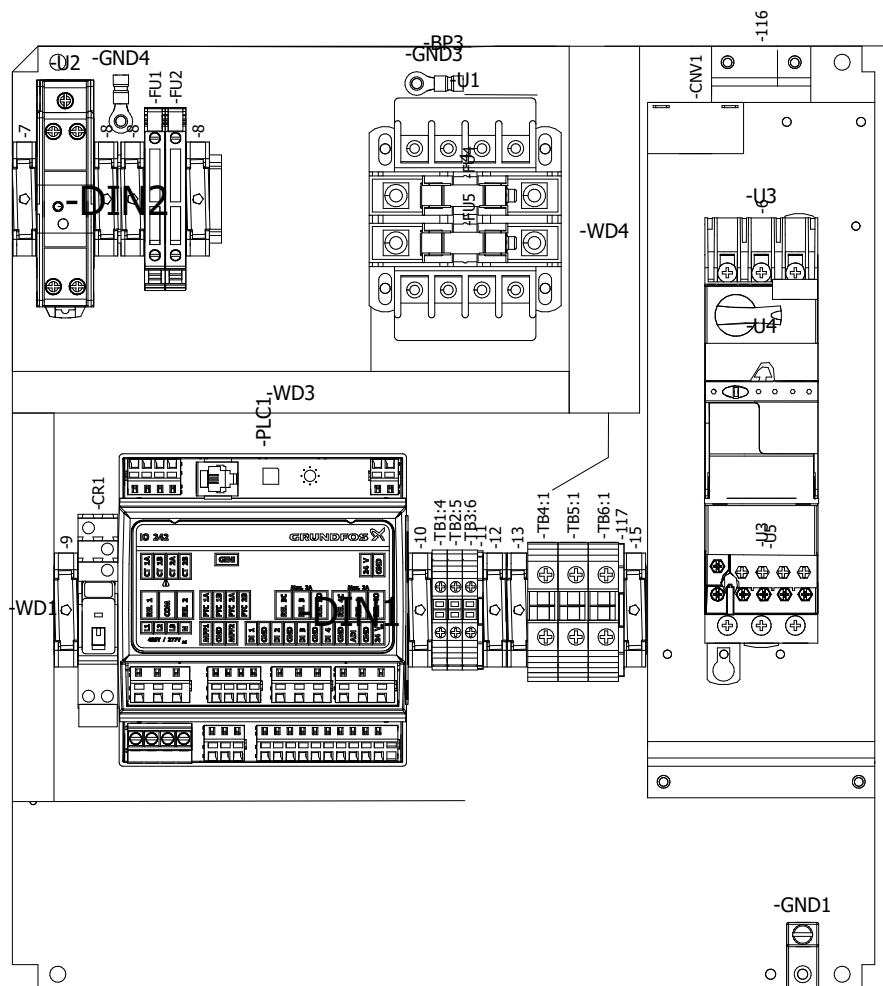
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Change Note

Date

Name

# Enclosure legend



Device tag	Description
DIN1	Rail Din, Steel, Low
WD1	Duct, Wire, 0.5" x 1.5", WHT
9	Din Rail, End Stop
15	Din Rail, End Stop
U1	Transformer 50VA,208/230/460:120
4	
FU4	Fuse, Primary, FNQR, 0.5A
FU5	Fuse, Primary, FNQR, 0.5A
DIN2	Rail Din, Steel, Low
7	Din Rail, End Stop
8	Din Rail, End Stop
8	Din Rail, End Stop
8	Din Rail, End Stop
U2	Power Supply, IDEC, 24 VDC,15W
CNV1	Transformer Current, SIRIO, 152035
GND1	Lug, Ground
U3	Motor Starter, Tele, LUB32
U3	
U3	
U4	Motor Starter Overload,LUCA32, 8-32A
6	Phase Sperator Lub
U5	Motor Starter Tele, Aux. Cont, LU
10	Din Rail, End Stop
TB1	Terminal Block 30A, SE
TB2	Terminal Block 30A, SE
TB3	Terminal Block 30A, SE
11	Block, End Barrier,30/50/65A,SE
13	Din Rail, End Stop
GND3	
FU1	Fuse 5mm x 20mm, 1 Amp
FU2	Fuse 5mm x 20mm, 1 Amp
GND4	
PLC1	IO242 Basic
12	Din Rail, End Stop
BP3	Backplate, Grundfos, DaYu, 16X14
WD3	Duct, Wire, 0.5" x 1.5", WHT
WD4	Duct, Wire, 1" x 3", WHT
116	Bracket ,Standoff, DaYu, 3P, LUB
117	Block, End Barrier, 85A, SE
TB6	Terminal Block 85A, SE

Mounting Panel Layout

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