SAI DRIVE SOLUTIONS

XP DRIVE - ETL LISTED, CLASS I & II, DIVISION 1 XP VFD

XP Drive: Explosion-proof, CID1 Passively Cooled VFD



1/8 HP - 25 HP, no purging required, NEMA Type 7/4X

REFINERIES - CHEMICAL - PHARMACEUTICAL - WATER & WASTE - DISTILLERIES - AGRICULTURAL - PAINT BOOTHS

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XP Drive

ETL LISTED CLASS I & II DIVISION 1, PASSIVELY COOLED, NEMA TYPE 7/4X, EXPLOSION PROOF VFD

INTRODUCTION

The XP Drive is an ETL Listed, Class I & II, Division 1 explosion-proof VFD offered by SAI. The product includes a passively cooled variable frequency drive within a cast aluminum NEMA Type 7/4X enclosure with circuit protection, local operators and pilot indicators.

The XP Drive has been certified by ETL to meet UL 508A, UL 1203 and CSA C22.2 standards for use within CID1 & CIID1 hazardous rated environments.

The passively cooled VFD does not need purged air to operate. There are no active fans to fail or fan filters to maintain. The XP Drive can be installed directly within the classified area allowing for a simplified installation. The XP Drive is cost effective compared to larger Type 7 active-filter XP alternatives.

ADVANTAGES

- Install in the classified area near the motor
- Allows for short motor lead lengths
- Avoids technical issues associated with long motor-lead lengths
- Direct control & monitoring of the VFD via local operators & indicators
- Increased process efficiency & operator safety

The XP Drive is the drive of choice for Class I & II, Division 1 hazardous locations (HazLoc).



ETL LISTED PER UL 508A & UL 1203
CID1, Grps B, C & D
CIID1, Grps E, F & G
Temp code T5

Intertek
5004518



INPUT VOLTAGE
240 VAC 1-PH & 3-PH
480 VAC 3-PH

POWER RANGE
1/8 HP - 25 HP

NEMA TYPE 7 / 4X
INDOOR / OUTDOOR

STANDARD FEATURES

- Certification: ETL Listed Class I & II, Division 1
- Cooling: Passively cooled, no purged air or AC required
- Enclosure: Compact NEMA Type 7/4X
- Electrical protection: Circuit breaker disconnect
- Local operators: Hand-Off-Auto, Speed adjust, Fault-Reset push button
- Pilot lights: Run & Fault
- Safety: Safe Torque Off (STO) CAT 2 E-Stop
- Communications: MODBUS RTU
- Operating temperature: -10°C to 40°C
- Control: Remote run command & speed reference
- Warranty: 1 year factory

OPTIONS

- 3% AC input or output reactor
- Additional operators
- Raycap surge protection device
- Front panel powder coating
- Top mounted window kit w/ digital display
- Remote metering display
- Remote HMI / operator control panel
- FieldBus protocol option cards
- Temp rating of 50°C available

** Available options vary depending on model configuration*

MADE IN THE USA

Stainless steel bolts maintain NEMA 4X rating of enclosure. Suitable for use indoors or outdoors. Enclosure is water-proof and corrosion resistant.

Main breaker disconnect with locking eyelets allows you to secure handle.

Mounting feet

NEMA Type 7/4X cast aluminum enclosure rated for Class I Grps B, C & D, Class II Grps E, F & G. Class III Type 4. Enclosure for use in hazardous locations.

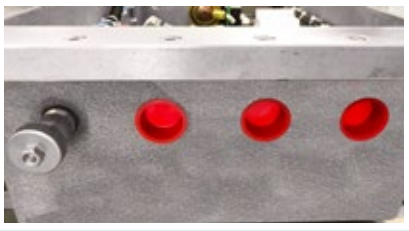
Optional display window with digital meter set to Hz or RPM.



XP operators & indicators providing VFD control and monitoring. Includes power, run & fault-reset indicators, speed adjust, hand-off-auto and STO CAT2 E-Stop.

Stainless steel hinges allows the door to be opened easily providing unrestricted access to the components. Follow all safety warnings.

Top or bottom conduit entry holes for input and output wiring plus breather drain.

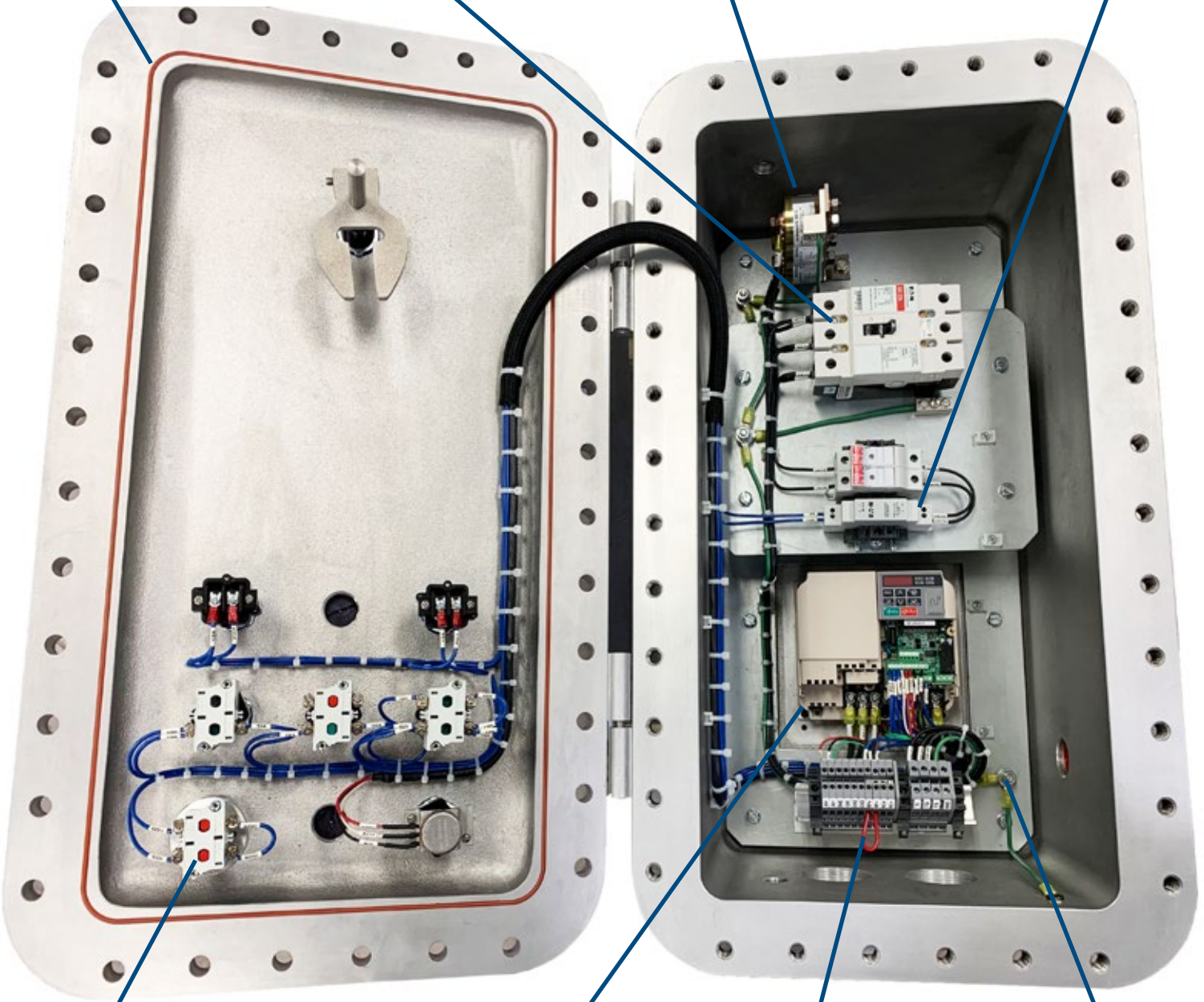


Silicon gasket
Type 4/4X water resistant.

UL 489 main breaker disconnect

Raycap Strikesorb Surge Protection protects VFD from transient voltages.

24 VDC power supply for customer transducer.



XP indicators and operators, customizations available upon request.

Yaskawa industrial VFD
1/8 HP to 3 HP @ 240 VAC 1-Ph
1/4 HP to 10 HP @ 240 VAC 3-Ph
1/4 HP to 25 HP @ 480 VAC 3-Ph

Terminal connection block for input, output and fieldbus communications.

Complete unit grounding

XP DRIVE - TECHNICAL SPECIFICATIONS

POWER RANGE

HP	Input voltage & phase	Max FLA	kW
1/8 HP to 3 HP	120 - 240 VAC 1-Ph [1]	2.2 A - 9.6 A	0.1 - 2.2
1/4 HP to 10 HP	200 - 240 VAC 3-Ph	4.2 A - 28 A	0.2 - 7.5
1/4 HP to 25 HP [2]	380 - 480 VAC 3-Ph	2.1 A - 34 A	0.2 - 18.6

1 For CID2 areas, 120 VAC input voltage can be supported by a separately purchased 120:240 VAC CID2 step-up transformer

2 All VFDs are rated heavy duty (HD) with the exception of the 25 HP / 34 A model which is rated as normal duty (ND)

ENCLOSURE FRAME SIZES

The XP Drive enclosure is made from cast aluminum alloy with NEMA Type 7/4X rating. The XP Drive is suitable for use indoors or outdoors and is water and corrosion resistant. The standard build is designed for an ambient operating temperate of -10C to 40C.

HP (HD)	208-240 VAC 1-Ph	208-240 VAC 3-Ph	380-480 VAC 3-Ph
1/8 HP	B8		
1/4 HP	B8	B8	B8
1/2 HP	B8	B8	B8
3/4 HP	B8	B8	B8
1 HP	B8	B8	B8
2 HP	B8	B8	B8
3 HP	C8	B8	B8
5 HP		B8	B8
7.5 HP		D8	C8
10 HP		D8	C8
15 HP			D8
20 HP			D8
25 HP (ND)			D8

Frame	Dimensions (Inches H x W x D)	Weight (LBS)
B8	22.25 x 16.25 x 10.89	150
C8	28.25 x 16.25 x 10.89	200
D8	40.25 x 16.25 x 11.27	260

NB: The enclosure sizing matrix is based on standard build and 40C temp rating. The quoted enclosure size therefore maybe larger depending on the power characteristics and options selected.

Submittal drawings are provided ARO for technical review and customer sign-off.

ENVIRONMENTAL

Standard (s) / Rating	ETL Listed, Class I Division 1 Grps B, C & D & Class II Division 1 Grps E, F & G temp code T5 UL 508A 3rd Edition, UL 508C 3rd Edition, UL 1203 5th Edition & CSA C22.2 #14, #25 & #30
Operating temperature	-10°C to 40°C as std. 50°C optional
Storage temperature	-10°C to 60°C
Humidity	0 to 95% relative humidity, non condensating
Max altitude	1,000m (3,300 ft) without derating

ELECTRICAL

Control system	Frequency control, open loop sensorless vector
Frequency output	0 - 320 Hz
Protections	Circuit breaker disconnect with through door operator & optional 3% AC input line reactor
Communication Options	D-Device Net, E-EtherNet/IP, P-Profibus, B-Profibus, M-Modbus TCP/IP, L-Mechatrolink-II
Remote control	Factory configured for 4-20mA (0 - 10V optional)
Programming	Use PC tools or keypad HMI (keypad for programming only, not for hazardous area use)

XP DRIVE 40C MODELS

The XP Drive models below are all based on standard build with 40C temperature rating. Configuration options include; 3% line reactor, surge protection, additional operators & pilot indicators, communication cards and 50C temp rating.

Input Voltage	Phase	HP	FLA	Frame	XP Drive Part Number
208-240 VAC	1-Ph	1/8	0.6	B8	XP120EY030B840EL00
		1/4	1.1	B8	XP120QY030B840EL00
		1/2	2.2	B8	XP120HY030B840EL00
		3/4	3.2	B8	XP120TY060B840EL00
		1	4.2	B8	XP1201Y060B840EL00
		2	6.8	B8	XP1202Y100B840EL00
		3	9.6	C8	XP1203Y120C840EL00
	3-Ph	1/4	0.6	B8	XP320QY060B840EL00
		1/2	2.2	B8	XP320HY060B840EL00
		3/4	3.2	B8	XP320TY060B840EL00
		1	4.2	B8	XP3201Y060B840EL00
		2	6.8	B8	XP3202Y100B840EL00
		3	9.6	B8	XP3203Y200B840EL00
		5	15.2	B8	XP3205Y200B840EL00
		7.5	22	D8	XP3207Y200D840EL00
		10	28	D8	XP3210Y400D840EL00
380-480 VAC	3-Ph	1/4	0.6	B8	XP340QY040B840EL00
		1/2	1.1	B8	XP340HY040B840EL00
		3/4	1.6	B8	XP340TY040B840EL00
		1	2.1	B8	XP3401Y040B840EL00
		2	3.4	B8	XP3402Y050B840EL00
		3	4.8	B8	XP3403Y050B840EL00
		5	7.6	B8	XP3405Y110B840EL00
		7.5	11	C8	XP3407Y230C840EL00
		10	14	C8	XP3410Y230C840EL00
		15	21	D8	XP3415Y310D840EL00
		20	27	D8	XP3420Y380D840EL00
		25	34	D8	XP3425Y380D840EL00

For more XP VFD products including 100 - 650 HP, UL 1203 / NFPA FM Type Z purged CID2 control panels visit our website www.saidrives.com/xpsolutions

SAI reserves the right to update the technical specifications without prior notice.