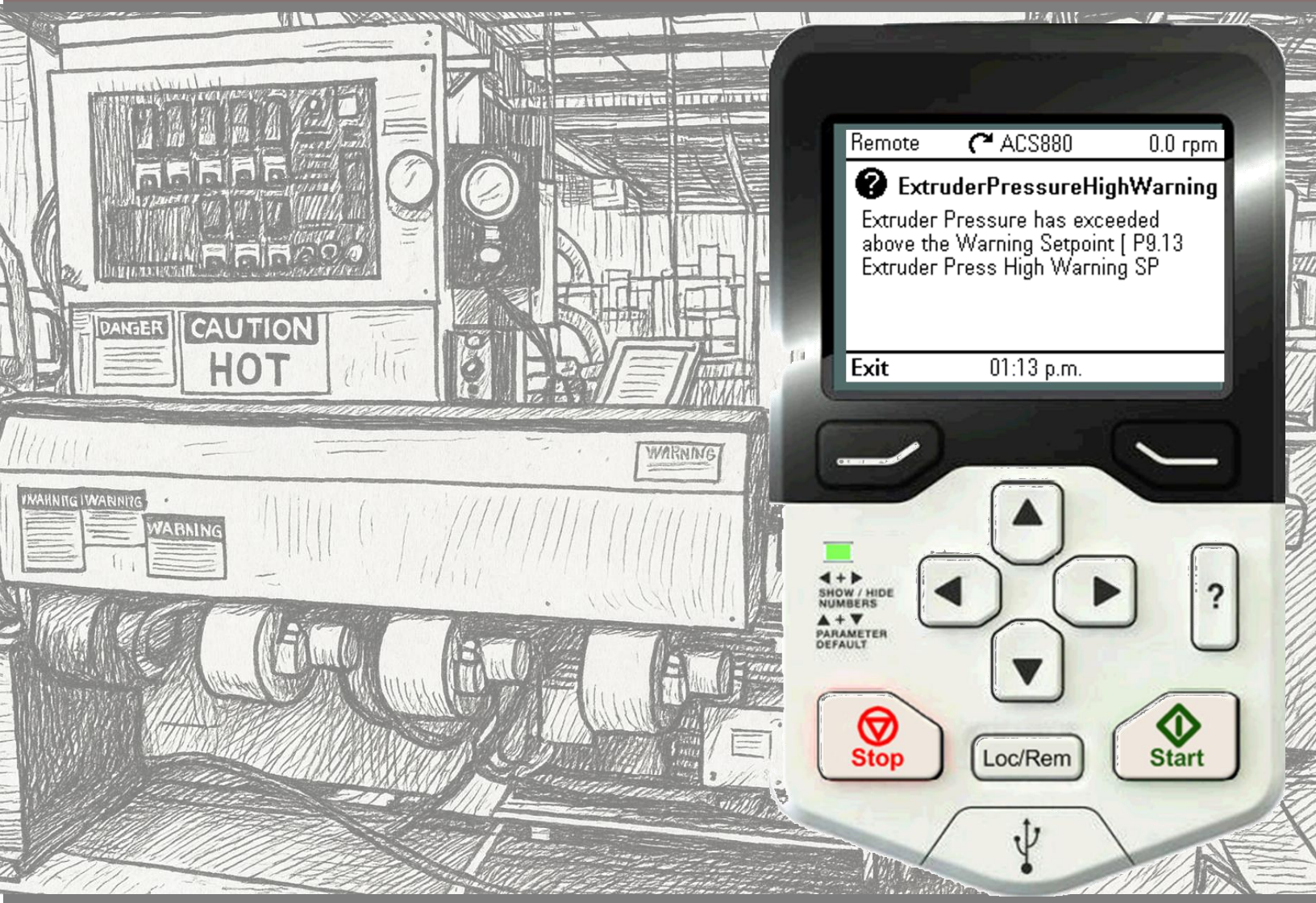
DRIVE GUARDIAN

www.extruderdrive.com

Scan me!



The **Drive Guardian** is the ***first application-specific drive built exclusively for plastic extrusion machinery,*** engineered to prevent mechanical failures, protect equipment, and provide true predictive maintenance through extrusion-focused monitoring and control features.

What is

EXTRUDER DUTY?

Plastic Extruders are a demanding application for AC drives and motors that require high starting torques and a wide operating speed range in a very harsh environment. Selecting the wrong drive and motor can lead to premature failure and extended downtime. As a manufacturer of both AC drives and motors, ABB in collaboration with Integrated Control Technologies has designed an Extruder Duty drive and motor package specifically for Extrusion taking out all the guess work.

ABB/Baldor *RPMAC* EXTRUDER DUTY MOTOR

- Laminated Frame Design for Easy DC Retrofits
- 200% Starting Torque
- 1000:1 Constant Torque Speed Range
- Insulated Bearings for longer life
- Bearing Brush to reduce bearing pitting
- RTD's and Thermostats to accurately measure motor temperature

ABB ACS880 with Application Specific Programming

- ***Direct Torque Control*** provides accurate speed control without the use of an encoder
- RTD and thermostat Inputs from Extruder Duty motor
- Pressure and Vibration sensor inputs
- Alarm outputs and display to notify operators of potential problems
- Multiple communication modules for simple interface to any PLC
- Configured Drive Packages designed for hostile environments

Integrated Control Technologies
Phone: 972-906-7445 **Email: sales@integratedcontroltech.com**

From Reactive Maintenance to Predictive Control

Introducing the First Drive Designed Specifcally for Plastic Extrusion Built on the ABB ACS 880 AC Drive Platform

FEATURES & CAPABILITIES

1. Screw Break Prevention

- **Cold Zone Start Inhibit** → prevents startup with frozen or cold material in the barrel.
- **Zero-Speed Ramp** → eliminates high torque shock loads during start-up

➡️ *Prevents screw breakage and eliminates one of the costliest catastrophic extrusion failures.*

2. Low Pressure Start Prevention with Bypass

- Ensures proper melt conditions before screw rotation

➡️ *Avoids metal-on-metal contact and premature wear.*

3. High-Pressure Protection Package

- High Pressure Warning
- High Pressure Slow-Down
- High Pressure Shutoff to prevent blown rupture plugs

➡️ *Protects operators, eliminates safety incidents, and prevents screw, barrel, and die damage.*

4. Predictive Motor Overheating Protection

- Inputs for RTDs and Thermostats

➡️ *Provides early detection of motor heating problems, allowing planned shutdowns instead of failures.*

5. Gearbox Bearing & Mechanical Fault Detection

- Input for Vibration Sensor

➡️ *Early detection of bearing wear, misalignment, or developing gearbox failure.*

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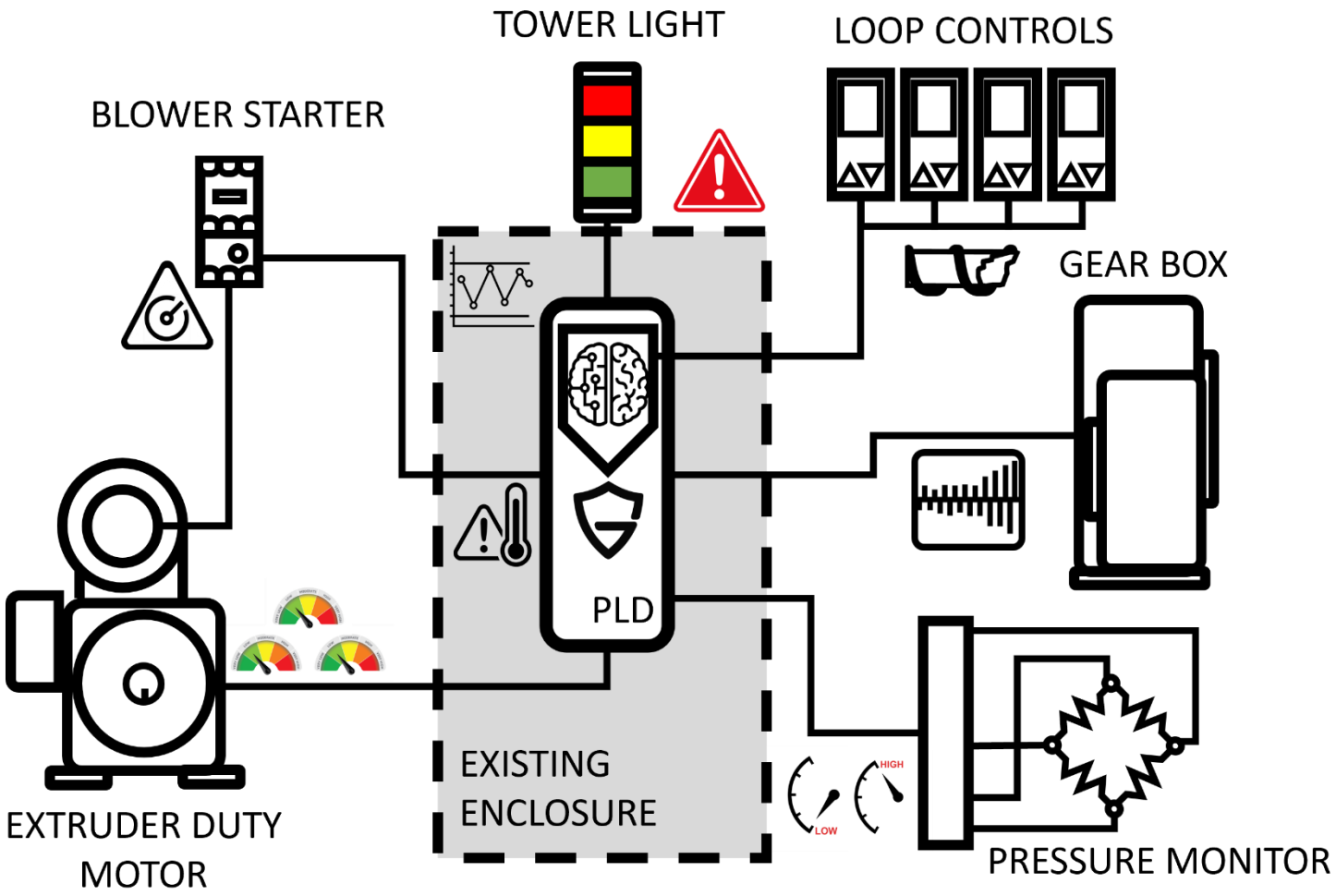
THE DRIVE GUARDIAN IS A
PLASTIC LOGIC DRIVE (PLD)

It incorporates the power of a PLC inside of the AC Drive with the control logic to monitor and protect the extruder!



STAND ALONE DRIVE

DRIVE SPECIFICATIONS

Item	Specification
Rating	25-300hp Heavy Duty
Input Voltage and Frequency	380-500VAC, 3-phase, 50-60 Hz
Overload Capacity	150% for one minute
Control Types	Direct Torque Control (DTC)
Motor Types	Induction, Extruder Duty (Recommended)
Protective Design Types	Open (IP00), Nema 1 (IP20), Flange-mount (N12) back
Standard I/O (Digital Inputs)	DI1 Run/Stop
	DI2 Motor Thermostat Fault, Normally Open
	DI3 Fault Reset, Normally Open
	DI4 Melt Pump Auto-Manual (Switch)
	DI5 Cold Zone Alarm from PID Loop Controls, Normally Open
	DI6 Low Pressure Bypass (Switch)
Standard I/O (Digital Outputs)	DIO1 Blower Overload Fault (Normally Open Contact)
	DIO2 Warning Alarm (Blinking) (Normally Open Contact)
	RO1 Drive Ready (Normally Open Contact)
	RO2 Drive Running (Normally Open Contact)
	RO3 Drive Fault (Normally Open Contact)
Standard I/O (Analog Inputs)	AI1 Pressure Input (0-10VDC (default)/ 4-20mA) (Scaled for 10,000 PS
	AI2 Speed Reference (0-10VDC)
Standard I/O (Analog Outputs)	AO1 Motor Temperature Display (0-10VDC)
	AO2 Vibration Sensor Display (0-10VDC)
Extension I/O Module 1 (Analog Inputs)	AI3 Motor Temperature RTD1 (0-10VDC) (Scaled for 0-200° Celsius)
	AI4 Motor Temperature RTD2 (0-10VDC) (Scaled for 0-200° Celsius)
Extension I/O Module 1 (Analog Outputs)	AO3 Excitation Current for RTD1 (4-20 mA)
	AO4 Excitation Current for RTD2 (4-20mA)
Extension I/O Module 2 (Analog Inputs)	AI5 Motor Temperature RTD3 (0-10VDC) (Scaled for 0-200° Celsius)
	AI6 Vibration Sensor (4-20mA) (Scaled 0-1000 Hz)
Extension I/O Module 2 (Analog Outputs)	AO5 Excitation Current for RTD3 (4-20mA)
	AO6 Spare (0-10VDC, 4-20 mA)
Communication	Ethernet IP, Modbus TCP/IP, ProfiNet, ProfiBus, Modbus RTU, EtherCat, ControlNet, DeviceNet, PowerLink, CanOpen
Connectivity	Drive Composer PC Tool, Bluetooth with Smart Phone App

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STAND ALONE DRIVE

DRIVE RATINGS

Customer Number	Description
EDG-034HDA-PLD-R4	25hp(HD),x2 analog I/O,conduit cover,IEC programming,R4 frame
EDG-040HDA-PLD-R4	30hp(HD),x2 analog I/O,conduit cover,IEC programming,R4 frame
EDG-052HDA-PLD-R5	40hp(HD),x2 analog I/O,conduit cover,IEC programming,R5 frame
EDG-065HDA-PLD-R5	50hp(HD),x2 analog I/O,conduit cover,IEC programming,R5 frame
EDG-077HDA-PLD-R6	60hp(HD),x2 analog I/O,conduit cover,IEC programming,R6 frame
EDG-096HDA-PLD-R6	75hp(HD),x2 analog I/O,conduit cover,IEC programming,R6 frame
EDG-124HDA-PLD-R7	100hp(HD),x2 analog I/O,conduit cover,IEC programming,R7 frame
EDG-156HDA-PLD-R7	125hp(HD),x2 analog I/O,conduit cover,IEC programming,R7 frame
EDG-180HDA-PLD-R8	125/150hp(HD),x2 analog I/O,conduit cover,IEC programming,R8 frame
EDG-240HDA-PLD-R8	150/200hp(HD),x2 analog I/O,conduit cover,IEC programming,R8 frame
EDG-260HDA-PLD-R9	200hp(HD),x2 analog I/O,conduit cover,IEC programming,R9 frame
EDG-302HDA-PLD-R9	250hp(HD),x2 analog I/O,conduit cover,IEC programming,R9 frame
EDG-361HDA-PLD-R9	300hp(HD),x2 analog I/O,conduit cover,IEC programming,R9 frame

DRIVE GUARDIAN INTERFACE

Remote-Mount Human Machine Interface that displays the operating conditions of the Drive Guardian with trending and data collection.

RATINGS:

- 8” Color Touchscreen
- Ethernet Communication

FEATURES

- Drive Operating Parameters
- Alarm Log
- Trending Screen
- Data Collections

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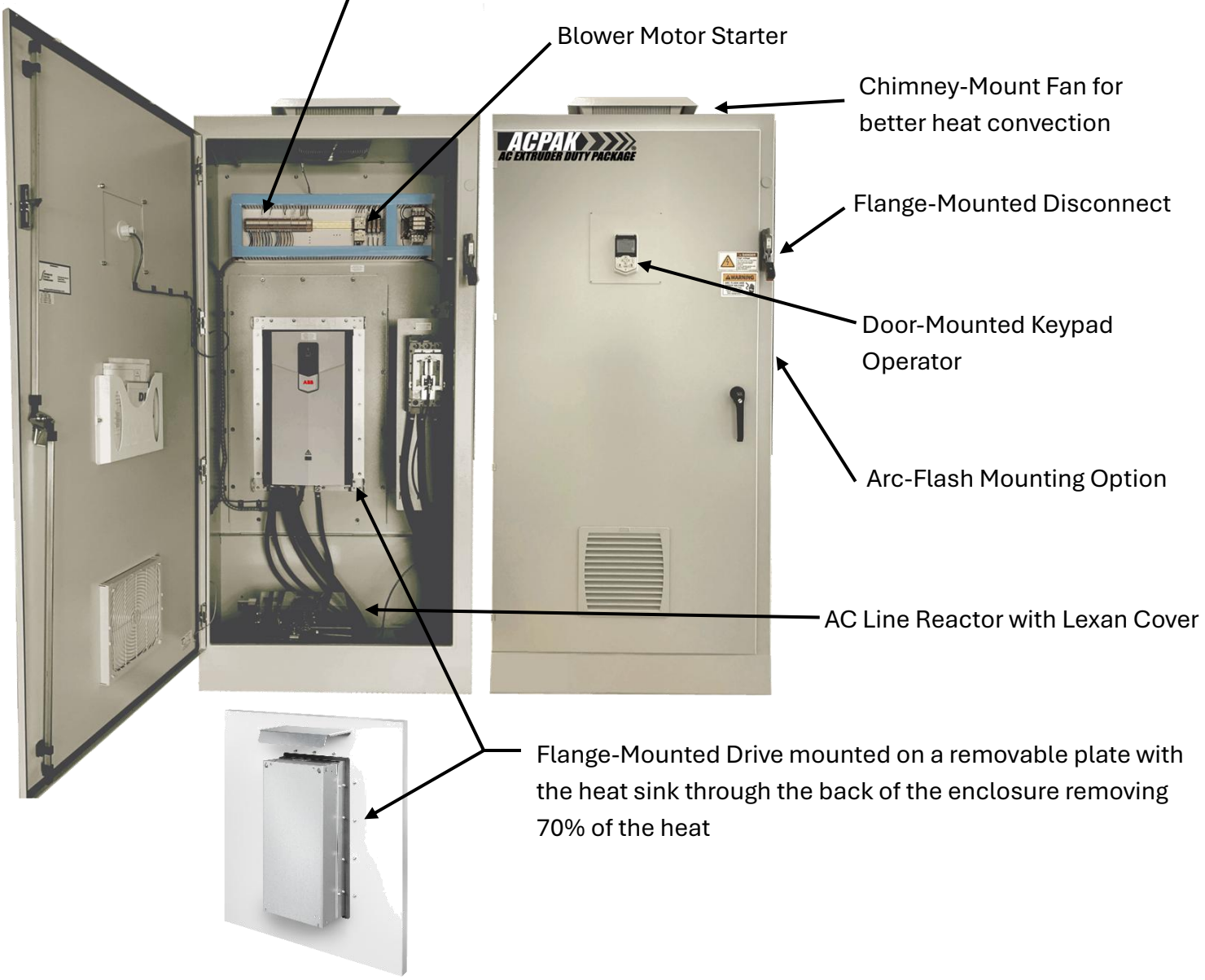
CONFIGURED DRIVES

ACPAK® AC EXTRUDER DUTY PACKAGE

100 - 300 Hp



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CONFIGURED DRIVES

ABB CABINET BUILT DRIVES

UP TO 1000 HP

The cabinet-built single drives from ABB are built to order, meeting your needs regardless of the technical challenges. The drive configuration includes rectifier, DC link, inverter, fuses, line choke and a main switch, all built into a compact cabinet for easy assembly and commissioning.

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