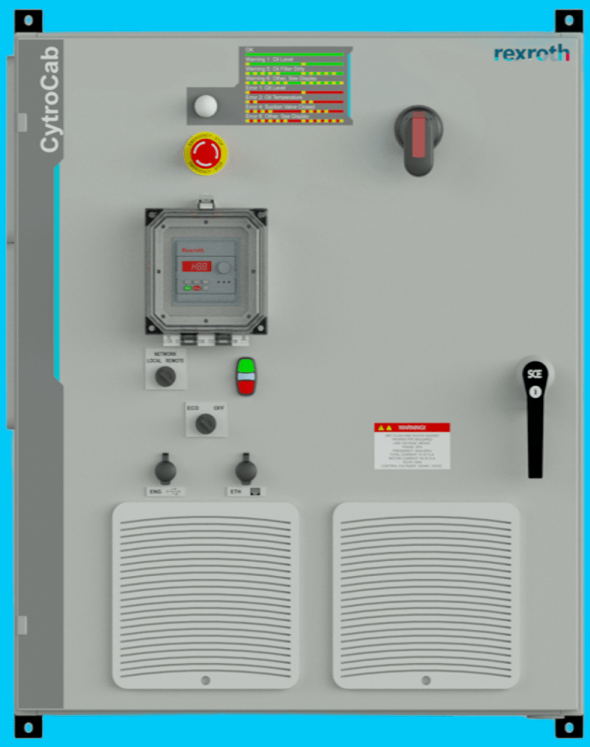
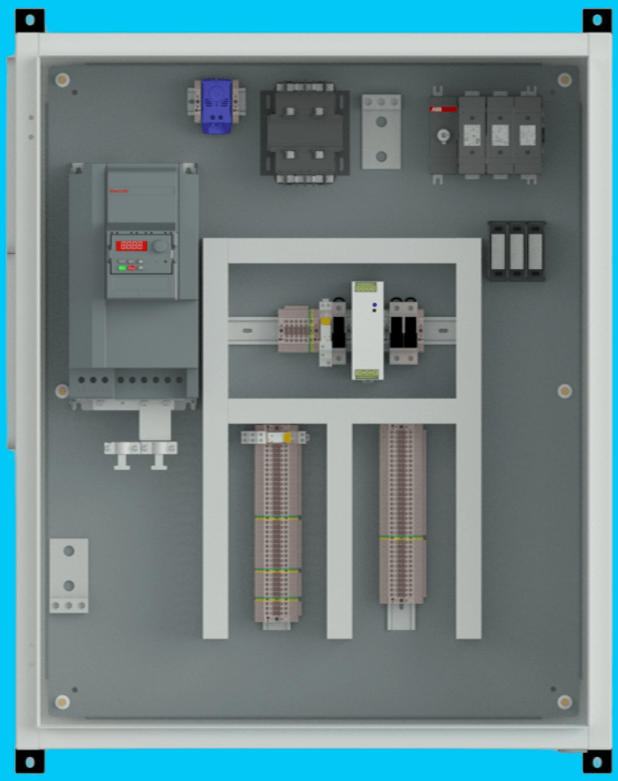
CytroCab - Enclosed Sytronix Solutions Sales Brochure



*Front view shown with additional options



Contents of enclosure

Offer Description

CytroCAB is a packaging program for Bosch Rexroth *Sytronix* pumping solutions DRn and FcP. The intent of the program is to present pre-engineered solutions for the most requested drives and options. The solutions are pre-engineered, and options limited in order to 1) offer standard pricing, and 2) shorten delivery time. Customizations are still available via Bosch Rexroth, but these requests will go through the normal "Engineered to Order" (ETO) quotation, engineering, and build processes.

Sytronix is a special control technique embedded in the drive, designed to provide unique energy savings, reduced environmental noise, and longer pump life when coupled with Bosch Rexroth pumps.

All CytroCAB solutions start with a Base Configuration, the features of which are described below. A set number of options are available at time of order, which are described further down. The model code configurator shown here, is useful for understanding the basic configurations and selecting available options. The program currently supports 2 available drive configurations Sytronix DRn, Sytronix FcP. At present, 480 VAC, 3phase, 60 Hz line power is supported. Most horsepower options are available, as shown in the model code configurator.

Features of Sytronix Software

- Close loop pressure control for Bosch Rexroth pumps when used with HM20 pressure transducers
- Energy and noise reductions due to reducing the speed of motor during low flow
- Pump protection (leakage and thermal detection)
- Sleep wake function for keeping accumulators charged to pressure
- Wire break detection for pressure transducer
- Sensor monitoring for oil temperature, oil level, and oil filter

Drive Selection

1. Sytronix DRn – Designed to control an induction motor coupled to a Bosch Rexroth variable displacement piston pump with DR control, models A10VSO, A4VSO and A15VSO. DRn firmware is designed to adjust electric motor speed, based on instantaneous pressure and flow sensing to optimize pump displacement for the highest possible pump efficiency. Motor speed will automatically rise and fall as flow demand changes, resulting in overall lower motor speeds leading to; reduced pump noise, reduced motor windage noise, increased life of motor and pump bearings, and higher pump efficiencies.
2. Sytronix FcP – Designed to control an induction motor coupled to a Bosch Rexroth fixed displacement pump, models PGH, A10FZO, and A10VZO-EZ4. FcP firmware is designed to provide flow control from the pump by adjusting the speed of the electric motor. It is also capable of controlling the outlet pressure of the pump, when connecting a pressure transducer to the drive and pump outlet.

Model Code

1		2		3		4		5	6	7	8	9	
CytroCAB	**-**	**DRN**	**-**	**480**	**-**	**0040**	**-**	**NN**	**NN**	**NN**	**NN**	**NN**	

Product

01	**EFC 5610, NEMA 12 Rated Control Cabinet, Class J Fused Line Side, ECO Switch, USB Engineering Port, Control Transformer, Cooling Fans w/Thermostat (Max Ambient 100°F)**	**CytroCAB**

FC Variant (Drive Software)

02	**Sytronix DRn (Available for 4kW - 315kW)**	**DRN**
	Sytronix FcP (Available for 4kW - 90kW)	**FCP**

Supply Voltage

03	**480 VAC, 3 Phase**	**480**

Power

04	**Code**	**FcP**	**DRn**	**0040**
	kW	**0040**	**0040**	
		0055	**0055**	
		0075	**0075**	
		0110	**0110**	
		0150	**0150**	
		0185	**0185**	
		0220	**0220**	
		0300	**0300**	
		0370	**0370**	
		0450	**0450**	
		0550	**0550**	
		0750	**0750**	
		0900	**0900**	
			1100	
			1320	
			1600	
			2000	
			2500	
			3150	

Options

05	**Rotary Fused Disconnect Switch w/Class J Fuses**	**FD**
	Without Option	**NN**
06	**Local Control Kit (includes start button, stop button, drive reset button, local-remote selector switch, multi-function status light, power supply and I/O expansion module)**	**LC**
	Hydraulic Power Unit Supervisory Functions (Use X5, EX1-EX4 for HPU monitoring, and includes local control kit "LC")	**PU**
	Without Option	**NN**
07	**HIM Accessibility Kit (includes: HIM remotely mounted to door behind window kit, maintains NEMA 12 protection)**	**HA**
	Without Option	**NN**
08	**Emergency Stop Button (push to stop, pull to reset, SIL 2 configuration, dual contact button connected directly to STO, no estop relay)**	**ES**
	Without Option	**NN**
09	**Ethernet Communication (includes Ethernet communication expansion module, external RJ45 port, Cat5 cable)**	**EC**
	Without Option	**NN**

Note: Care should be taken when selecting the correct drive size. Knowledge of the specific hydraulic application and operating points not simply connected motor size are key to a successful application. Bosch Rexroth has several selection tools available to assist with sizing, as well as experienced application engineers to discuss your application

Base Configuration Features

All possible configurations of CytroCAB will feature the Bosch Rexroth EFC 5610 variable frequency drive as the heart of the system, housed in a NEMA 12 enclosure for environmental protection. The configurator presents the various sizes of drives available at this time, expressed in power (kW). At present, 480 VAC, 3phase, 60 Hz line power is supported. Others may become available as demand presents itself.
Base Features

- Bosch Rexroth Variable Frequency Drive – Model EFC-5610
- Industry unique Sytronix pumping software
- Drive mounted HIM (Human Interface Module)
- Safe torque off (STO), supports SIL 2 operation when appropriately connected
- Painted, carbon steel enclosure, wall/foot mount, 1 or 2 doors depending on size
- NEMA 12 ingress protection, dust, rain and directed liquid protection
- Fan cooled interior for 100F max ambient, thermostatic control
- Short circuit protection – Class J fuses
- Thermal protection: drive and NEMA motor
- ECO mode/Normal mode selector switch (DRn only)
- Door mounted engineering port (USB)
- All drive signal connections via screw terminal blocks (start, stop, local, remote, fault, fault reset, Emergency Stop signals available for remote connection), offering user flexibility and access to all signals.
- Line side lugs
- Ground bus
- Load (motor) side connection at drive
- Motor shield connector provided
- Built using UL508A practices, UL508A panel listing available at extra cost (ETO project)
- Design supports top (right) and/or bottom power penetrations with sufficient bend radius reserve space
-

Options

1. **(FD)** Rotary Disconnect – Lockable, through door rotor disconnect capable of isolating line power from drive and fuses.
2. **(LC)** Local Control Kit – Provides a typical set of features at the door of the enclosure, via 22 mm operators, which are only available through remote connection if using only Base Configuration.
    a. Motor Start/Stop/Reset pushbutton
    b. Local/Remote operation selector switch
    c. Multi-function light for fault and status indication

    (PU) Hydraulic Power Unit Supervisory Functions – Special firmware providing power unit monitoring and control when combined with recommended sensor kit. The **(LC)** option is also included when ordering this option.
3. **(HA)** HIM accessibility Kit – HIM is remounted to door front and surrounded by NEMA 12 compliant window/door access kit.
4. **(ES)** Emergency Stop Pushbutton – E-stop button mounted to door and wired directly to STO terminals. Provides SIL 2 operation. Push to stop, pull/twist to reset.
5. **(EC)** Ethernet Communication Kit – Provides industrial Ethernet connection between customer system and drive. Intended for permanent connection, not as engineering port. Choice of industrial protocol. User chooses from; Ethernet/IP, Profinet, EtherCAT or Sercos when configuring product.

Drive Specifications

HP(kW)	Output Current in Amps	Phase, Voltage	Max Ambient Temp. F(C)	Fuse (Class J)	Maximun Length of Shielded Motor Cables	Cable Sizes (Power, PE)	Approximate weight in pounds	Enclosure Dimmensions H x W x D
5(4)	7.7	3 Phase, 480V	100°(37.8°)	12	15m	12, 8G	142	30 x 24 x 12
7.5(5.5)	10.0			17.5	30m	10, 8G	145	30 x 24 x 12
10(7.5)	13.3			20		8, 8G	147	30 x 24 x 12
15(11)	19.2			35		8, 8G	200	36 x 30 x 12
20(15)	25.6			40		6, 6G	201	36 x 30 x 12
25(18.5)	31.0			50		4, 6G	206	36 x 30 x 12
30(22)	36.0			60		2, 4G	207	36 x 30 x 12
40(30)	48.1			80	50m	2, 4G	299	48 x 36 x 16
50(37)	58.3			100		1, 3G	311	48 x 36 x 16
60(45)	71.0			125		1/0, 1G	395	60 x 36 x 16
75(55)	86.0			150		2/0, 1/0G	404	60 x 36 x 16
100(75)	116.0			200		4/0, 3/0G	1030	72 x 48 x 24
120(90)	139.0			225		250, 3/0G	1078	72 x 48 x 24
150(110)	168.0			250	75m	2x3/0, 3/0G	1105	72 x 48 x 24
175(132)	200.0			300		2x250, 250G	1118	72 x 48 x 24
200(160)	240.0			350		2x350, 350G	1497	90 x 48 x 24
250(200)	301			450	100m	2x350, 350G	1820	90 x 72 x 24
315(250)	370			600		2x400, 400G	1820	90 x 72 x 24
400(315)	465			650		4x300, 2x300G	1947	90 x 72 x 24

For more information refer to EFC5610 Operating Instructions (R912005854 – Edition 14)

CytroCab System Overview