

OVERLOAD PROTECTION DEVICES

“Air Champ”

OVERLOAD PROTECTION SYSTEM

Overload Protection System (OPS) is a combination of a flange-mounted, air engaged clutch and an electronic control that electronically detects clutch slip in torque overload conditions. Upon recognition of the overload, the system disengages the clutch, and can operate an external signalling device (i.e. warning light/alarm).

OPS includes two proximity sensors: one mounted on the clutch input, and one mounted on the clutch output. The control compares the signals from the individual sensors and determines if the clutch is slipping.

- ▶ The clutch is re-engaged at any speed, and at any position of the clutch interface
- ▶ The clutch torque is remotely adjusted with a simple air regulator
- ▶ The motor disconnects from the load when an overload occurs, so the motor runs cooler and more efficiently, without current surges and blown fuses
- ▶ The OPS also prevents the motor rotor inertia from contributing to damage caused by torque overloads
- ▶ The FMCE clutch is self-contained and protected from dirt and debris
- ▶ The controller is available in a NEMA Type 12 enclosure, or as a stand-alone board for panel mounting
- ▶ OPS operates on standard AC or DC voltages and frequencies
- ▶ Quick connect/disconnect wire connection coupling
- ▶ Soft-start capabilities provides more sensitive overload protection than ball-detent mechanisms

OVERLOAD PROTECTION SYSTEM (OPS)

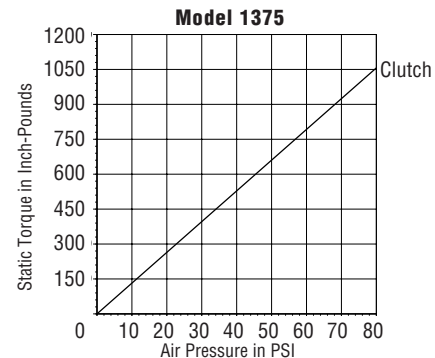
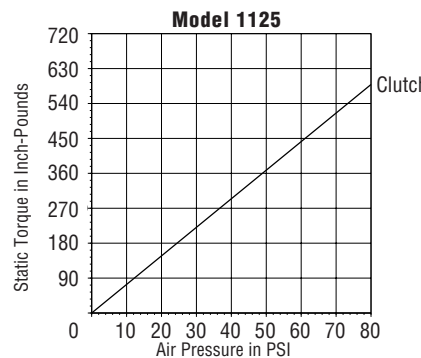
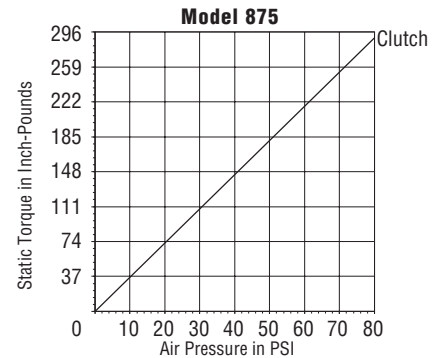
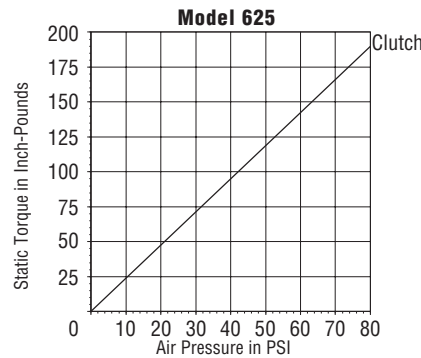
Model:	OPS - Chassis Version	OPS - Enclosed Version
Product Number:	964403	964404
Input Power	12 VDC @ 800 mA	12VDC @ 800 mA
Options:	115 VAC @ 110 mA 230 VAC @ 57 mA	115 VAC @ 110 mA 230 VAC @ 57 mA
Inputs:	Inductive proximity sensors: npn, open collector, current sinking or NAMUR	Inductive proximity sensors: npn, open collector, current sinking or NAMUR
Outputs:	Relay: 28 VDC, 115/230 VAC @ 2 Amps. K1: 12 VDC @ .6 Amps power available, used to operate clutch solenoid. K2: available for auxiliary use. No power available.	Relay: 28 VDC, 115/230 VAC @ 2 Amps. K1: 12 VDC @ .6 Amps power available, used to operate clutch solenoid. K2: available for auxiliary use. No power available.

NEMA MOTOR/FRAME SELECTION CHART

Use this chart as specification and operational criteria for your application.

HP of Motor	RPM	Frame Number	Motor Shaft (IN)	Clutch-Brake Model Number	HP of Motor	RPM	Frame Number	Motor Shaft (IN)	Clutch-Brake Model Number
1/4	1800	56C	0.625	FMCE-625	1-1/2	1800	145TC	0.875	FMCE-875
1/4	1200	56C	0.625	FMCE-625	1-1/2	1200	182TC	1.125	FMCE-1125
1/3	1800	56C	0.625	FMCE-625	1-1/2	900	184TC	1.125	FMCE-1125
1/3	1200	56C	0.625	FMCE-625	2	1800	145TC	0.875	FMCE-875
1/2	1800	56C	0.625	FMCE-625	2	1200	184TC	1.125	FMCE-1125
1/2	1200	56C	0.625	FMCE-625	2	900	213TC	1.375	FMCE-1375
1/2	900	143TC	0.875	FMCE-875	3	1800	182TC	1.125	FMCE-1125
3/4	1800	56C	0.625	FMCE-625	3	1200	213TC	1.375	FMCE-1375
3/4	1200	143TC	0.875	FMCE-875	3	900	215TC	1.375	FMCE-1375
3/4	900	145TC	0.875	FMCE-875	5	1200	215TC	1.375	FMCE-1375
1	1800	56TC	0.625	FMCE-625	5	1800	184TC	1.125	FMCE-1125
1	1800	143TC	0.875	FMCE-875	7-1/2	1800	213TC	1.375	FMCE-1375
1	1200	145TC	0.875	FMCE-875	10	1800	215TC	1.375	FMCE-1375
1	900	182TC	1.125	FMCE-1125					

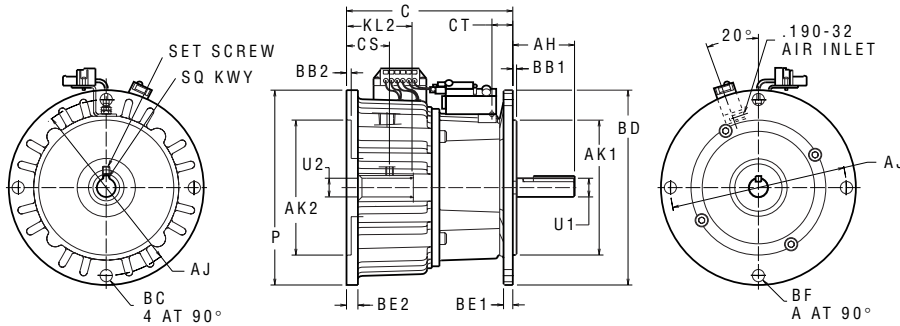
TORQUE VS. AIR PRESSURE



NOTE: Dynamic torque is approximately 85% of static torque.

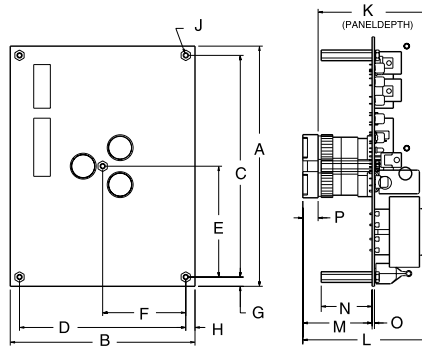
OVERLOAD PROTECTION SYSTEM - APPROXIMATE DIMENSIONS (INCHES)

► MODELS 625, 875, 1125 & 1375



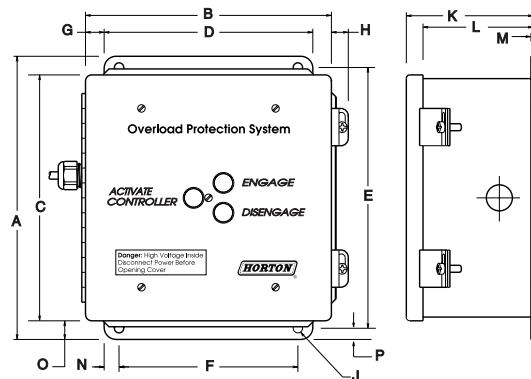
MODEL	PRODUCT NUMBER	AH	AJ	AK1 ^{+0.000} _{-0.002}	AK2 ^{+0.002} _{-0.000}	BB1	BB2	BE1	BE2	BF	C	CS	CT	KL1	KL2	P	KEY (SQ)	KEYWAY		U1 ^{+0.000} _{-0.001}	U2 ^{+0.001} _{-0.000}
																		WD	DP		
625	964405	2.06	5.875	4.498	4.502	0.31	0.16	.31	.38	.406	5.55	1.43	0.75	1.38	2.13	6.30	0.188	0.188	0.094	0.625	0.625
875	964406	1.98	5.875	4.498	4.502	0.39	0.19	.39	.56	.406	5.98	1.47	0.94	1.38	2.24	7.81	0.188	0.188	0.094	0.875	0.875
1125	964407	2.58	7.250	8.498	8.502	0.54	0.19	.54	.37	.562	8.01	1.75	1.09	2.00	2.90	9.63	0.250	0.250	0.125	1.125	1.125
1375	964408	3.08	7.250	8.498	8.502	1.12	0.19	1.12	.37	.531	9.04	1.96	1.44	2.56	3.39	10.38	0.250	0.250	0.125	1.375	1.375

► OPS CONTROLLER – CHASSIS VERSION



MODEL	PRODUCT NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
OPS Chassis	964403	6.50	5.00	6.00	4.50	3.00	2.25	0.25	0.25	#6-32UNC-2B.38DP 5X	3.03	3.44	1.88	1.38	0.06	0.41

► OPS CONTROLLER – ENCLOSED VERSION



MODEL	PRODUCT NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
OPS Enclosed	964404	9.50	8.25	8.25	7.00	8.75	6.00	0.62	0.57	0.31 HOLE 4X	4.25	3.69	0.07	0.50	0.62	0.37