



INGERSOLL-RAND

**POWER**  
MANAGEMENT

YOU MANAGE YOUR BUSINESS, WE'LL MANAGE YOUR POWER

**IR** Industrial Solutions

## THE SIMPLE WAY *to* MANAGE YOUR POWER

IR's Electrical Installation Start-up kit includes a fusible disconnect, wire, conduit, fuses, all fittings and mounting hardware.

An Ingersoll-Rand disconnect can safeguard you and your company against a tragedy from a fault in electrical appliances to circuit wiring or misuse of electrical equipment. Our disconnects are designed to turn the power off in 0.03 of a second, if electricity is detected leaking to earth at a level that could be harmful.

And now, with the ease of purchasing our electrical start-up kit, there is no need for you to determine which installation parts are required, IR has done that for you!



### FEATURES OF IR DISCONNECTS

#### GALVANIZED STEEL ENCLOSURES

- Easy to remove high strength protective shields provides for easier wiring and mounting, plus safety. The cover snaps into place and no screws are required.
- Larger 1" knockouts on the bottom, back, and sides of the enclosure.
- Al/Cu rated line and load lugs are easily accessible, even from the bottom of the enclosure.
- Ample wiring space provides for quicker and easier wiring. Meets or exceeds all NEC wire bending space requirements.
- Ample space for mounting with a stud gun. Single keyhole, two or three point mounting.
- Padlockable, door provision helps provide safety and prevents tampering.
- Enclosures are NEMA 3R rated.
- Can be mounted outdoors.

#### FUSED PULLOUTS

- Fuses are installed behind the protective shield that cannot be removed until the pullout handle is removed, disconnecting the power.
- Class H fuse clips are provided.
- On/off control provided by a pullout handle, and for your safety the protective shield can not be removed when the pullout is on the ON position.
- Pullout handle can be conveniently stored in the compartment in the OFF position, helping to prevent the handle from being misplaced.
- Applicable to Compressors, Dryers, Cooling Towers.
- Easy to install.
- Can be mounted on the wall or side of unit.
- Horsepower rated.

# ELECTRICAL INSTALLATION START-UP KIT

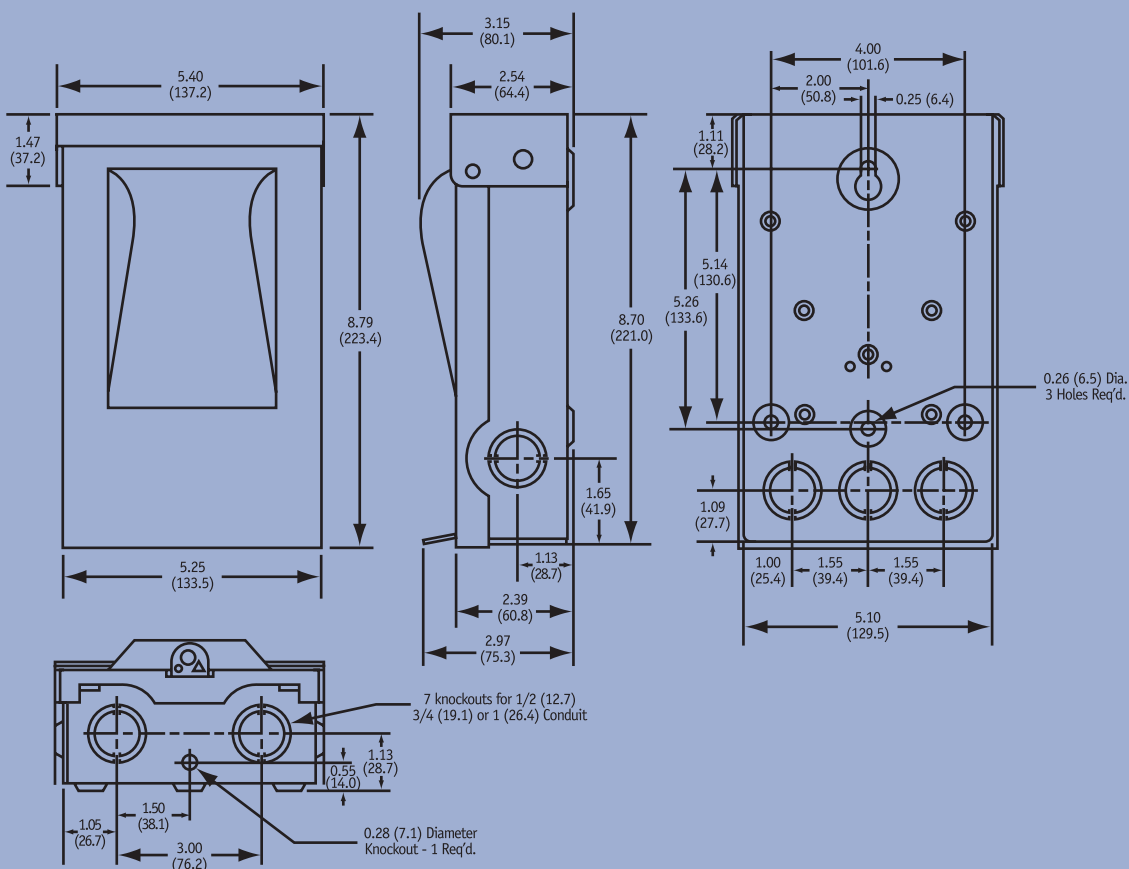
## 230 VOLT, SINGLE PHASE, ELECTRICAL INSTALLATION KITS

Kit Part Number	HP Rating	Fusible Disconnect Size	Fuse (2 Pack) Size	Wire & Conduit	All Fittings	Mounting Hardware
38338612	1HP	30A	12A	6' 1/2"	✓	✓
38338620	2HP	30A	17.5A	6' 1/2"	✓	✓
38338455	3HP	30A	25A	6' 1/2"	✓	✓
38338463	5HP	60A	40A	6' 1/2"	✓	✓
38338471	7.5HP	60A	60A	6' 3/4"	✓	✓

## TECHNICAL DATA AND SPECIFICATIONS (Metallic/Galvanized Steel Enclosure)

Description	Dimensions in inches (mm)			Weight lbs. (kg)	Wire Size Range (Cu/Al) 60C or 75C	Max HP Rating	
	Height	Width	Depth			120V	240V
30A Fused	8.70 (220.9)	5.40 (137.2)	3.15 (80.0)	27 (12)	#14-3	1	3
60A Fused	8.70 (220.9)	5.40 (137.2)	3.15 (80.0)	27 (12)	#14-3	3	10

\* Please check with local and state requirements for electrical connections, many states require a licensed electrician for the final connection.



Ingersoll-Rand's heavy duty disconnects utilize a double break, rotary blade action for high performance and reliability.

These disconnects have a number of applications from service entrance to branch circuit protection. They are also horsepower rated for use as motor circuit switches.



### FEATURES OF IR HEAVY DUTY DISCONNECTS

- High visibility handle and nameplate for indication of switch position – ON or OFF.
- Clear line terminal shields.
- Generous wiring room – meeting or exceeding NEC wire bending space, even with field installed crimp lugs.
- Built-in fuse pullers for easy removal of fuses (NEMA 4X only).
- Visible double break rotary blade mechanism for two points of contact indicating a positive open and close, easier operation, and help prevent contact burning for longer contact life.
- Triple padlocking capability with additional locking capabilities at top and bottom of cabinet door.
- Interlocking mechanism to prevent door from opening in the on position. A defeater mechanism provides access when necessary.
- Tangential knockouts are provided in NEMA 1 enclosures through 200A.
- Bolt-on hub kits for switches in NEMA 4X enclosures.
- Stainless steel enclosures for UL Type 4X applications – dust-tight, watertight and corrosion resistant.
- Rated for 60°/75° wire connection.

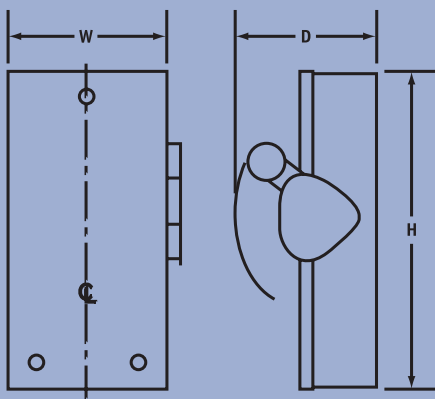
### APPLICATION/TECHNICAL SPECIFICATIONS

- Type of facility, residential, industrial: commercial, light industrial, institutional.
- Maximum voltages:  
600V ac – 250V dc and 600V dc.
- Short circuit rating for non-fused switches: 10,000 rms symmetrical amperes.
- Short circuit rating with standard fuse clips: switches with Class H fuse clips – 10,000 rms amperes 800-1200A switches with Class L fusing – 200,000 rms.
- Short circuit rating with fuse options: switches with Class R or Class J fusing and 200-800A switches with Class T fuse adaptation – 200,000A at 480V and 100,000 rms symmetrical amperes at 600V.
- Maximum horsepower ratings ac:  
200HP at 240V ac 250HP at 240V, 500HP at 480V and 600V.
- UL (NEMA) enclosure types:  
Type 1 indoor, Type 4X watertight, dust-tight and corrosion resistant.
- Terminals:  
box lug (screw pressure) for Al/Cu wire.

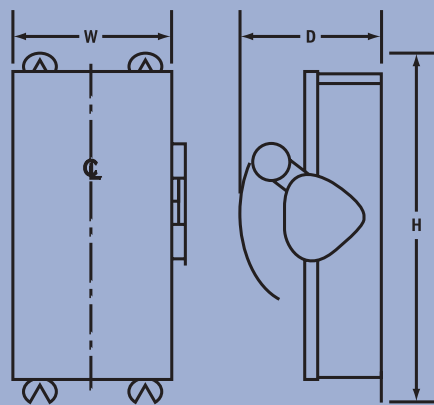
# MEDIUM to HEAVY COMPRESSOR DISCONNECTS

## HEAVY DUTY, FUSIBLE, 240 and 600V, 3-POLE SOLID NEUTRAL, SINGLE THROW

Average Rating	NEMA 1 - Dimensions in inches			NEMA 4X - Dimensions in inches		
	Height	Width	Depth	Height	Width	Depth
30	15 $\frac{5}{8}$	8 $\frac{5}{8}$	10	17 $\frac{5}{8}$	8 $\frac{5}{8}$	10
60	15 $\frac{5}{8}$	8 $\frac{5}{8}$	10	17 $\frac{5}{8}$	8 $\frac{5}{8}$	10
100	21 $\frac{11}{16}$	11 $\frac{1}{2}$	10	24	11 $\frac{1}{2}$	10 $\frac{1}{4}$
200	27 $\frac{5}{8}$	16	11 $\frac{1}{4}$	34 $\frac{3}{8}$	16	11 $\frac{1}{2}$
400	53 $\frac{3}{8}$	23	12 $\frac{5}{8}$	57 $\frac{5}{8}$	23	12 $\frac{5}{8}$
600	59 $\frac{3}{8}$	24	14 $\frac{1}{4}$	71 $\frac{3}{4}$	25 $\frac{3}{8}$	14 $\frac{1}{4}$
800	68	25 $\frac{3}{8}$	14 $\frac{1}{4}$	71 $\frac{3}{4}$	25 $\frac{3}{8}$	14 $\frac{1}{4}$
1200	65 $\frac{1}{2}$	31 $\frac{3}{16}$	17 $\frac{1}{2}$	-	-	-



**NEMA 1**  
30-1200 Amperes



**NEMA 4X**  
30-800 Amperes

## THE ECONOMICAL WAY *to* MANAGE YOUR POWER

A buck boost transformer allows you to efficiently operate your electrical equipment and lower your electric bills at the same time!

The transformer corrects a lower or higher voltage rating that is more suitable for your equipment, which in turn saves you money.

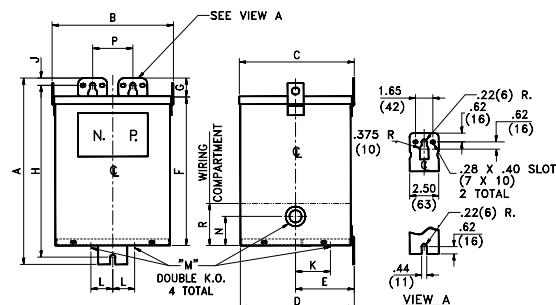
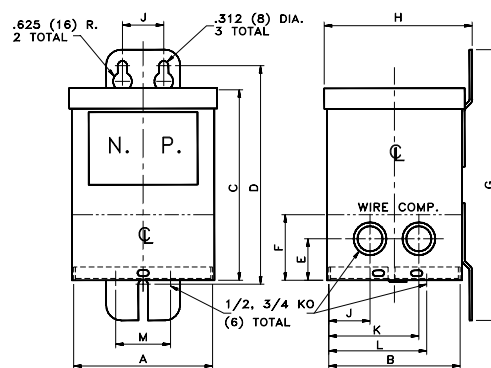
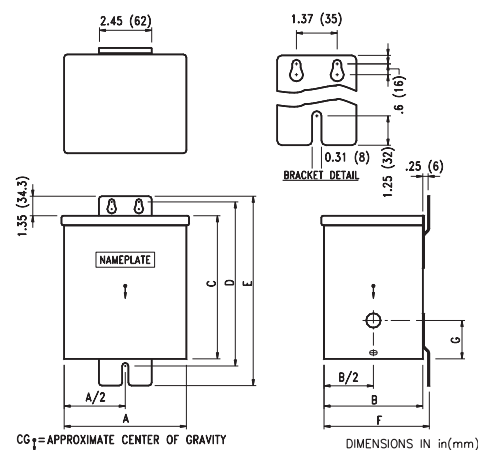


### OUR TRANSFORMER CAPABILITIES [ Single- and Three-Phase Applications, 60Hz ]

- Mountable in any position indoors and upright only outdoors.
- Sand and Resin Encapsulated design.
- Totally enclosed, non-ventilated enclosures.
- Enclosures are NEMA 3R rated.
- 185°C Insulation System, 115°C rise standard.
- Available in single-phase ratings through 37.5 kVa.
- Available in three-phase ratings through 75 kVa.

### THE TRANSFORMERS FEATURES, BENEFITS and FUNCTIONS

- UL Listed.
- 60Hz operation.
- 600 volt class insulation.
- Short-term overload capability as required by ANSI.
- Meet NEMA ST-20 sound levels.



## THE COST-EFFECTIVE WAY *to* MANAGE YOUR POWER

Line Reactors used in Air Compressor installations insure an increase in system reliability. Considering the cost-to-benefit ratio, the addition of a Line Reactor will insure the elimination of Compressor downtime and costly production delays.

Ingersoll-Rand three-phase AC line reactors are intended for use as input filters for adjustable speed DC drives and as input or output filters for AC-PWM variable frequency drives. Drive performance is significantly improved, the drives input rectifier is protected from failure or damage, and drive harmonic demands are tamed with the addition of an IR line reactor. IR line reactors act as interface



buffers between solid state power circuits and the line or the motor. (Not unlike the surge protector for your desktop PC). All drives, in any application, will benefit when applied with IR line reactors.

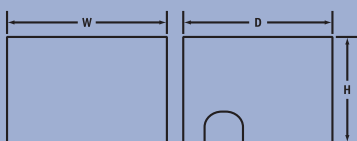
### BENEFITS OF INPUT LINE REACTORS

- Attenuation of line harmonics.
- Reduced motor operating temperature.
- Reduced audible motor noise.
- Waveform improvement.
- Virtual elimination of nuisance tripping of drives due to utility power factor correction capacitor switching.
- Extended switching component life (transistors, SCRs).
- Extended motor life.
- Filtered electrical noise (pulse distortion and line notching).
- Minimized power disturbances.
- Elimination of equipment downtime.

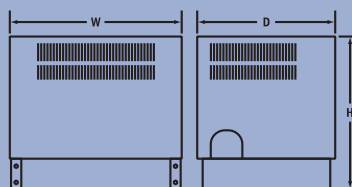
### LINE REACTORS ACT AS A SURGE PROTECTOR FOR YOUR AIR COMPRESSOR INSTALLATION

- Designed for any type of air compressor.
- 50/60Hz.
- 30 – 500HP.
- NEMA 1 Enclosure.
- Units are available for 230, 460 and 575v.

CAB size	Dimensions in inches		
	Height	Width	Depth
1	6.5	8	6
2	7.5	10	7
3	9	12	8
4	16	15	13
5	19	20	16
7	36	29	31



CABINET PRESENTATION 1 - 2



CABINET PRESENTATION 3 - 7

OBTAIN A  
**5 YEAR**  
 DRIVE WARRANTY  
 WHEN PURCHASED  
 WITH A NIRVANA  
 OR VFD KIT



Voltage line notching, or commutation notching, is also caused by diode bridge rectifiers. Line Reactors provide voltage-dividing impedance which reduces the depth and rounds the edges of the notches, thereby eliminating drive cross-talk, interference, and equipment damage.

Three phase AC Line Reactors offer an economical solution to power problems encountered with the use of variable-speed drives in Air Compressor installations. With the addition of a Line Reactor, drive performance is significantly improved, the

drives input rectifier is protected from failure or damage, and drive harmonic demands are tamed.

Based on system load conditions, capacitors are switched in and out of the circuit in a daily, weekly or seasonal pattern. These transient voltage conditions caused by utility capacitor switching will cause drives to shut down without warning (Figure 1). The addition of a Line Reactor will limit the magnitude of inrush current, preventing trips and component failures (Figures 2 & 3). Line Reactors provide additional circuit inductance which slows rapid changes in current.

### REDUCING INPUT LINE CURRENT HARMONICS FROM ADJUSTABLE FREQUENCY DRIVES

The main reason is that when you install a Line Reactor at the input of the Drive, the voltage at the Drive terminals becomes flat-topped, and the charging time for the DC bus capacitor increases. This change in charging time of the capacitor increases the current pulse width while decreasing its peak amplitude. The bottom two figures show the line current for a 100 kW Drive with and without a Line Reactor.

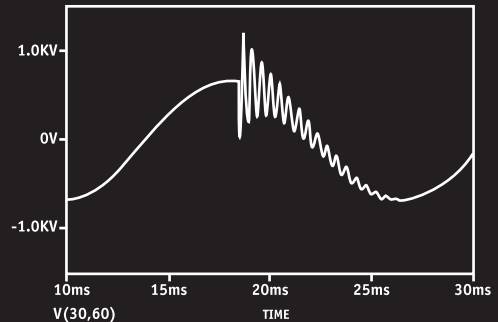


FIGURE 1

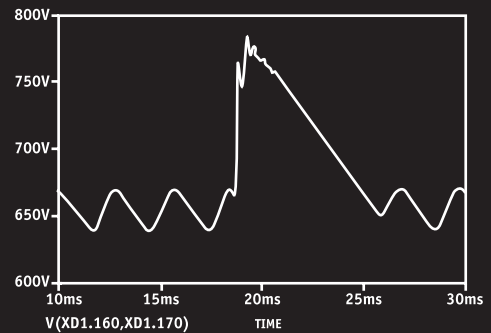


FIGURE 2

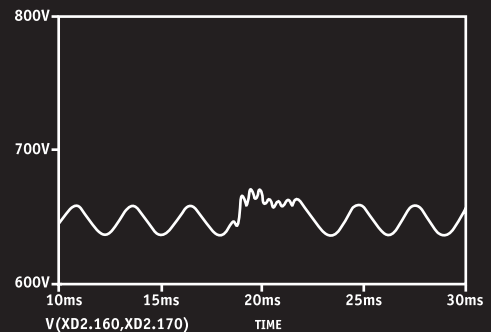
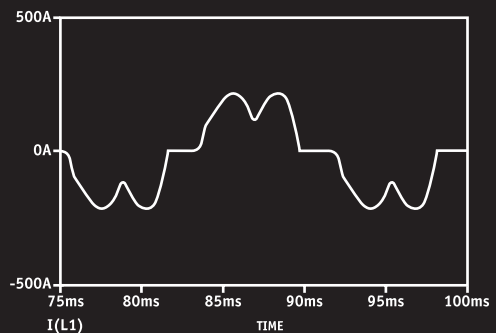
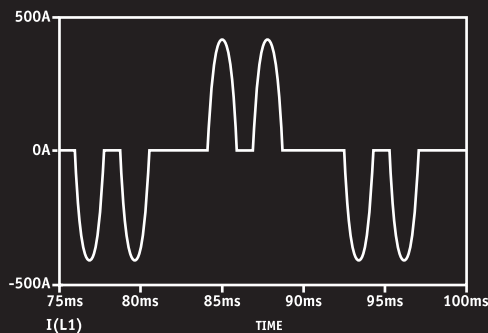


FIGURE 3



## MORE THAN AIR: SOLUTIONS.

Online solutions: [www.air.irco.com](http://www.air.irco.com)  
 or call 1-800-526-3615

