

EnergAir Retrofit VSD Kit 'KEB Drive' – T38



Product Fact Sheet

OPTIMISE INDIVIDUAL COMPRESSORS & MULTIPLE COMPRESSOR INSTALLATIONS WITH ENERGAIR VARIABLE SPEED DRIVES

A dedicated drives partnership between EnergAir and KEB, a global manufacturer of inverter drives, has added the unique multi-function Combivert to the 'EnergAir' Compressor Management System range. The Combivert is used widely to reduce energy usage in the operation of fans and pumps. Similar operating conditions also mean that the Combivert is the ideal VSD for use as the optimising element in compressed air applications, matching demand to supply in single or multiple compressor installations.



COMBIVERT AS THE VARIABLE SPEED CONTROL SOLUTION FOR YOUR COMPRESSOR

Significant efficiency gains can be achieved by retrofitting a Combivert to a designated compressor(s) in single or multiple compressor installation. EnergAir overcomes difficulties experienced with retrofitting with its VSD-R interface controller. Importantly, with this module fitted the compressor will remain standard and "believe" that it is running its own standard motor and regulating in Load/Unload mode. In addition, the VSD-R interface controller enables the compressor motor control and safety circuits to remain intact and functional to original manufacturer's specifications, and have priority over the VSD drive run operation.

COMBIVERT AS A MODULAR ELEMENT IN THE ENERGAIR COMPRESSOR MANAGEMENT SYSTEM

The VSD-R controller also interfaces the Combivert to the EnergAir "SX" compressor Management controller (when installed). The latter employs an enhanced efficiency single pressure band control philosophy, is capable of selecting from alternate machine sizes and is fully VSD compressor aware, meaning that it is capable of forming a coherent air compressor management system which acts in unison with all system resources to provide optimum efficiency at all times under all operating conditions.

USE VSD-R IN CONJUNCTION WITH YOUR INVERTER PANEL ASSEMBLY

Prefer to do it yourself? Have your own panel build capability? EnergAir VSD-R kits are available to purchase separately and provide panel builders, system integrators and competent individuals with a ready made retrofit VSD kit (i.e. excludes the KEB inverter panel assembly). The kit includes the items detailed over plus guidance notes on compressor integration aspects of retrofit VSD. Panel builders, system integrators and competent individuals must separately purchase the KEB inverter & panel assembly.



DRIVE SYSTEMS CONTENTS:

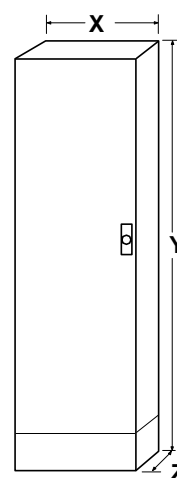
The drive system consists primarily of a 'KEB Drive' cabinet and EnergAir VSD-R controller kit.

EnergAir VSD-R Controller kit (Y05ENER24.00):

The EnergAir VSD-R Controller is a wall mounted IP65 panel assembly. The VSD-R controller interfaces with the 'KEB Drive' or self build cabinet to provide precision PID control and safe operation of the 'KEB Drive' or self build cabinet with the compressor. A variety of temperature sensors (M16, M20 & M24), pressure sensor, and compressor iPCB complete the kit contents. The VSD-R controller also provides an RS485 connection between VSD-R & EnergAir SX compressor management controllers (used in multiple compressor installations – See previous page).

The Retrofit VSD Kit 'KEB Drive cabinet & VSD-R Controller kit':

Rated Amps	Part Number	kW (nominal motor)	HP	Dimensions X-Y-Z (mm)
9.5	Y05ENER04.00	4.0	5.5	600-800-250
12	Y05ENER05.00	5.5	7.5	600-800-250
16.5	Y05ENER06.00	7.5	10	600-800-250
24	Y05ENER07.00	11	15	600-800-250
33	Y05ENER08.00	15	20	600-800-250
42	Y05ENER09.00	18.5	25	600-800-250
50	Y05ENER10.00	22	30	600-800-250
60	Y05ENER11.00	30	40	600-800-250
75	Y05ENER12.00	37	50	1200-1200-400
90	Y05ENER13.00	45	60	1200-1200-400
115	Y05ENER14.00	55	75	1200-1200-400
150	Y05ENER15.00	75	100	1200-1200-400
180	Y05ENER16.00	90	125	1200-1200-400
210	Y05ENER17.00	110	150	1200-1800-500
250	Y05ENER18.00	132	180	1200-1800-500
300	Y05ENER19.00	160	220	1200-1800-500
370	Y05ENER20.00	200	270	1800-1800-500
460	Y05ENER21.00	250	350	1800-1800-500
570	Y05ENER22.00	315	420	1800-1800-500



In the 'KEB Drive' cabinet the following components are installed:

- Main switch with short-circuit protection.
- Transformer 400V – 230V with primary and secondary protection.
- Main protection of the power supply to the compressor
- Suitably rated cabinet ventilation, controlled by thermostat with filters and grate.
- KEB frequency inverter & MODBUS operator (See size table above)
- KEB EMC filter in accordance with EMC-guideline EN61800-3
- KEB input-choke
- KEB motor-choke
- (All KEB components in accordance with the current consumption of the compressor motor)
- All connection clips, rails, terminals etc as required
- Safety labelling
- Panel colour: RAL7035
- Top/Bottom cable entry
- Panel ambient temperature range assumed 0 to 38°

! Many air compressor drive motors are service factor rated and can consume up to 10% more power than the nominal motor rating. When sizing the drive, it is important to select the most suitable drive for the application. This is done by measuring the full load, at full rated pressure, current of the drive motor and selecting a drive with the appropriate current capacity. Motor power consumption will increase as internal to compressor air/oil separation element differential increases over time. This can result in an additional 5% of current consumed. Always make provision for a 5% increase in motor current with rotary screw or vane type air compressors. Increasing the delivery pressure of an air compressor above the manufacturers full load specification will result in approximately a 5% per bar (0.35% per PSI) additional current consumption. In some instances, allowances for the above will result in the selection of a drive unit that has a higher nominal kW specification than the nominal motor rating of the air compressor. This is normal practise.

