

## LonCEM 74mm Screw Compressor Control Module



The LonCEM is the next generation solid state electronic module that will serve as the primary protection for our air conditioning and refrigeration duty 05T

and 06T 74mm compressors.

It is an upgrade to and a replacement for the current CEM module (P/N 3TA0796B), which will continue to be available for the remainder of 2000. It simplifies the application of our compressors by eliminating the requirement for the reverse rotation, oil-pressure differential and oil filter differential electro-mechanical switches through the use of pressure transducers mounted directly on the compressor.

This bulletin provides an overview of the module. A detailed set of installation and application instructions can be obtained by contacting Application Engineering, or can be downloaded from the 05T/06T technical information section of our web-site ([www.carlylecompressor.com](http://www.carlylecompressor.com)).

A LonWorks® version of the module is available (under a separate part number), allowing communication over a LonWorks® control network. The network offers additional control features, access to sensor input data and alarm status. Access to historical operating parameters such as alarm history and compressor runtime is also available by accessing the module's memory storage over the network. A description of the module's networking capabilities (including a listing of and description of all network variables) is being updated and will also be available on our web-site shortly. Additional information on LonWorks® can be found at [www.echelon.com](http://www.echelon.com)

The module will be available as part of a package including all necessary sensors, wiring harnesses, and fittings. The remainder of this bulletin provides an overview of module functionality and a bill of materials for the module packages.

An overview of the modules control and protection functions are provided below:

- **Motor / Discharge Temperature Control** – The module continuously monitors motor and discharge temperature, providing control of liquid injection in order to maintain motor and discharge temperatures within acceptable operating limits.
- **Oil Pressure Protection** – The module continuously monitors the pressure drop through the oil system (oil cooler, piping, solenoid valve etc.) by monitoring the differential between the discharge and oil pressure sensors to insure adequate oil supply to the compressor. In addition, the pressure differential between oil and suction pressure is monitored to insure enough differential pressure to adequately lubricate the compressor.
- **VI Control** – The module controls the VI valve based on operating pressure ratio, optimally controlling the VI valve to insure the most efficient compressor operation.
- **Startup Sequencing** – The module insures proper compressor startup by sequencing the contactor, unloader and oil solenoid valves. A 20 second time delay between compressor starts is also built into the module.

To simplify installation, all of the required accessory items are included in each module package. Separate packages were developed for modules with and without the LonWorks® communication option. The following table lists all the components supplied in each package.

### **Bill of Materials**

<b>0TA1063 Package with LonWorks (Quantity)</b>	<b>0TA1064 Package without LonWorks (Quantity)</b>	<b>Carlyle P/N</b>	<b>Description</b>
1		3TA1061	LonCEM (with LonWorks Transceiver)
	1	3TA1062	LonCEM (without LonWorks Transceiver)
1	1	HK05YZ003	Low Pressure Transducer (suction)
2	2	HK05YZ002	High Pressure Transducer (discharge and oil)
3	3	06TA680007	Harness for Transducers (15 ft.. lead wire)
1	1	HH79NZ065	Discharge Temperature Thermistor (5 Kohm)
1	1	DD08SA051	SAE Discharge Adapter Fitting (1.3"L, 7/16"-20 SAE to ¼" NPT)
1	1	DD08SA052	SAE Suction Adapter Fitting (3.7"L, 7/16"-20 SAE to ¼" NPT)
2	2	DD17GA051*	Cross Fitting (suction and discharge)

\*Parker Part Number: AVC1-4

**Both of the new LonCEM packages are in stock effective 05/08/00 for shipment.**