

**GENERAL WARRANTY TERMS & CONDITIONS  
 FOR EICS PERMANENTLY SEALED CATALYSTS HAVING DIAMETERS OF  
 9.5 in., 11 in., 13 in. & 16 in.**

**Genisys Controls Limited Warranty to the Purchaser**

Genisys Controls, LLC ("FW Murphy Production Controls"), an Oklahoma corporation, warrants that the EICS Permanently Sealed Catalyst having a diameter of 9.5 in., 11 in., 13 in. or 16 in. ("Catalyst") sold to the purchaser ("Purchaser") conforms to FW Murphy's workmanship and performance specifications. This warranty only applies to the Catalyst when used in conjunction with an FW Murphy EICS System operating on the same engine. The period, terms, and conditions of this warranty are stated below.

**Warranty Period**

The Catalyst is warranted for 2 years from the date of shipment with a 3 month grace period. Purchaser must notify FW Murphy of a potential warranty issue within this time frame. If the failure is determined to be covered, FW Murphy will warranty the Catalyst according to the pro-rated schedule below:

<b>Hours of Operation</b>	<b>Warranty</b>
0-8,760	Free replacement catalyst
8,761-11,680	50% off customer's normal price
11,681-14,600	35% off customer's normal price
14,601-17,520	20% off customer's normal price
17,521 or more	No warranty

FW Murphy's obligation for any catalyst replaced under this warranty will only be for the balance of time remaining on the original Catalyst when it was determined to be non-conforming.

To be eligible for warranty consideration, the Catalyst being returned must be out of compliance with both the EICS emissions design specifications and the local emissions permit.

### **Workmanship, Performance, & Prerequisites**

FW Murphy warrants the Catalyst is without defect and the design will maintain its structural integrity for the length of the warranty period.

When installed on a Rich Burn Engine, FW Murphy warrants the Catalyst conversion rates for oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), non-methane non-ethane hydrocarbons (NMNEHC), and formaldehyde (HCHO) will meet the EICS design specifications provided the engine is and has been operated properly, the installed Catalyst is in compliance with FW Murphy's recommendations, and the Catalyst is operated in compliance with the prerequisites below:

The prerequisites for this warranty are as follows:

- (1) The engine is powered with natural gas.
- (2) The hydrogen sulfide content in the fuel gas should not exceed the engine manufacturer's published limits and be free of any silicon compounds.
- (3) The engine is operated with an FW Murphy EICS Control System equipped with an EICS Emissions Key.
- (4) The engine is to be in good operating condition, operated in accordance with the engine manufacturer's guidelines.
- (5) Continuous operation with intermittent ignition is avoided.
- (6) Ignition of fuel in the exhaust piping is avoided.
- (7) The supply of fuel is immediately disrupted if the ignition system fails.
- (8) The Catalyst is operated within a temperature range of 750°F inlet to 1,400°F outlet.
- (9) The engine oil used is low phosphate oil and has a very low ash content of less than 0.5 wt. % designed for operation with a three-way catalyst.
- (10) The engine oil consumption should not exceed the engine manufacturer's published values and be operated per the engine manufacturer's speed and load recommendations for continuous operation.
- (11) All EICS system components shall be in good working order.
- (12) Maintenance must be performed at recommended OEM intervals or at the intervals specified in the purchaser's formally developed and accepted maintenance program.
- (13) Engine's ignition timing is to be correctly set.

**Limitations**

The maximum liability of FW Murphy under this Warranty shall not exceed the original Catalyst purchase price. FW Murphy, in no event, shall be liable for any costs of labor performed by Purchaser, production losses or indirect or consequential damages resulting from a failure of the Catalyst to meet the performance Warranty.

This Warranty and FW Murphy’s obligation hereunder shall become null and void for any Catalyst which has been exposed to:

(i) halogen-containing compounds,

(ii) poisoning or masking agents found on the Catalyst which typically originate from the engine, cooler, compressor, well, additives, etc., including but not limited to, phosphorus, silicon, sulfur, arsenic, and heavy metals such as lead or zinc, where the aggregate loading of such agents exceeds the limits as specified below:

Individual Concentration Limits

<u>Contaminant</u>	<u>Parts per Million by Weight (ppmw)</u>
Phosphorus (P)	700
Silicon (Si)	1,000
Sulfur (S)	1,000
Heavy Metals (Pb, Hg, As, Sn, etc.)	1,500
Halogens (Cl, F, Br, etc.)	500
Alkali Earths and Metals (Na, K, Ca, Mg)	1,000

Total Aggregate Concentration Limit

Maximum Concentration for all Contaminants Not Native to the Coating or Substrate	4,000 ppmw
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(iii) exhaust temperatures in excess of 1,400 degrees Fahrenheit. See recommendation section for further information.

**Recommendations**

On new engines, newly reconstructed engines, or engines fueled by well gas, it is recommended the engine complete a 50-hour run cycle before the Catalyst is installed. This conditioning cycle will prevent debris or fluids from the new well or from the fabrication, reconstruction or assembly of the engine from contaminating the Catalyst.

For optimum performance, the Catalyst should be installed in a location where it will operate within a temperature range of 900°F to 1,250°F. A Catalyst temperature above 1,400°F can damage the Catalyst. To minimize this risk, the EICS System's maximum temperature setting should not be set above 1,400°F. It will be the responsibility of the Purchaser to maintain the EICS system so it will immediately shut the engine down should the Catalyst exit temperature reach the 1,400°F limit.

Successful operation of the Catalyst may require periodic cleaning, at an FW Murphy authorized facility, to eliminate masking agents, such as but not limited to, noncombustible particulates.

For best emissions performance results, the latest MOT file (firmware file) available on the FW Murphy Extranet website should be installed.

Other maintenance includes changing the EICS pre and post-catalyst oxygen sensors at least every 6 months.

In the event of a Catalyst issue, it is recommended the user contact FW Murphy's Technical Service group so that they can review the system's setup and operation before the Catalyst is removed and returned for a warranty claim.

### **Warranty Claims**

For the warranty to be exercised, the Purchaser must submit a warranty claim within the warranty period. A warranty claim includes submission of a completed (by Purchaser or end user) EICS Catalyst Warranty Questionnaire within 15 days of reported Catalyst failure. FW Murphy reserves the right within 30 (thirty) days from notice of failure, to request an inspection of the engine's operating condition for the purpose of confirming the Catalyst's failure.

The non-performing Catalyst must be returned to FW Murphy for the warranty to be honored.

Any failure of a Catalyst to conform to this Warranty shall be demonstrated to the satisfaction of FW Murphy by and at the expense of Purchaser. Determination of a non-performing Catalyst shall be based upon the performance of the Catalyst from the emissions measurements taken. The analytical data shall be gathered by either a third party qualified to perform the measurements or through the use of a certifiably calibrated measurement instrument operated by trained personnel from either the Purchaser or the end user.

THE FOREGOING WARRANTY AND REMEDIES ARE EXCLUSIVE. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, FW MURPHY DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, AND, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. FW MURPHY WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF TIME OR PROFITS, OR ANY INCONVENIENCE. FW MURPHY SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN



THE EXCLUSIVE WARRANTY SET FORTH IN THIS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES SHALL NOT BE RECOVERABLE EVEN IF THE REMEDIES OR THE ACTION PROVIDED FOR HEREIN

FAIL FOR THEIR INTENDED PURPOSE. THIS WARRANTY SHALL BE GOVERNED BY THE LAWS OF THE STATE OF OKLAHOMA.