1. CERTIFIED OMNI8/16/30 SIL 1 PRODUCTS.

This SIL 1 reliability information applies to the following products of the Omni8/16/30 range:

C1180B and all variants	Omni8C Remote Logic Unit Ribbon outputs
C1181B and all variants	Omni8C Remote Logic Unit Lamp Driver outputs
C1182B and all variants	Omni16C Compact Remote Logic
C1183B and all variants	Omni8P Sidebar Alarm Annunciator
C1184B and all variants	Omni16C Compact Remote Logic Unit Ribbon outputs
C1185B and all variants	Omni16C Serial Compact Remote Logic Unit Lamp Driver outputs
C1427A and all variants	Omni8P Alarm Annunciator
C1478B and all variants	Omni16C Remote Logic Unit Lamp Driver outputs
C1479B and all variants	Omni16C Remote Logic Unit Ribbon outputs
C1480B and all variants	Omni16C Alarm Annunciator
C1481B and all variants	Omni16C Sidebar Alarm Annunciator
C1483B and all variants	Omni16C Serial Alarm Annunciator
C1490B and all variants	Omni8C Alarm Annunciator
C1491B and all variants	Omni8C Sidebar Alarm Annunciator
C1620A and all variants	Omni30/8 Alarm Annunciator
C1621A and all variants	Omni32/8 Alarm Annunciator
C1623A and all variants	Omni30/4 Alarm Annunciator
C1680A	Omni16R Alarm Annunciator

2. CONDITIONS OF USE IN SAFETY-RELATED APPLICATIONS.

- The product must be used within its electrical and mechanical specifications.
- Specification apply to typical 24VDC operation.
- EMC environment must be "typical industrial environment" as specified in IEC61000-4-4.
- The inputs must be set to close in the NORMAL condition, opening in the ALARM condition.
- Options are not included. For safety parameters of optional modules contact Omniflex.

3. SAFETY PARAMETERS.

Safety parameters are summarised in the Table below. These parameters are common to all products listed. Because of internal modular construction, the same modules are used in all products and safety function of accepting and signalling a critical alarm is consequently also the same regardless of unit configuration.

Subsystem	Type B
DC	78%
SFF	83%
PFD_{avg}, (TI = 1 year)	2.02×10^{-3}
PFD_{avg}, (TI = 2 years)	4.03×10^{-3}
Safe failures detected λ_{SD}	495.5 FIT
Safe failures undetected λ_{SU}	192.1 FIT
Dangerous failures detected λ_{DD}	1623.0 FIT
Dangerous failure undetected λ_{DU}	458.8 FIT

An MTTR of 8hrs was used in the above PFD calculations.

KEY:

DC = Diagnostic Coverage	λ = failure rate per billion hours (1 FIT = 1 failure in 10^9 hours)
SFF = Safe Failure Fraction	Failure Rate Categories:
PFD = Probability of Failure on Demand	SU = Safe Undetected
TI = Test Proof Interval	SD = Safe Detected
MTBF = Mean Time Between Failures	DU = Dangerous Undetected
MTTR = Mean Time To Repair	DD = Dangerous Detected

4. EXPLANATION OF RESULTS.

In safety-related applications, the products must be used with 24VDC supply and inputs configured as "failsafe" (i.e. contacts closed to common when normal, de-energised and open when abnormal).

To satisfy SIL 1 requirements, watchdog output relay must be used to make use of diagnostic coverage of the product.

Any hardware failure which causes the annunciator to open watchdog contacts or change to the ALARM state (equivalent to open input contacts) is considered a safe failure.

Any hardware failure, which results in a unit not accepting and displaying an alarm (remains in NORMAL state of alarm and watchdog), is deemed a dangerous failure.

The listed failure rates are valid for operating stress conditions of a "typical industrial environment" similar to that specified in IEC61000-4-4, Annex A, with an average temperature over a long period of time not greater than 40°C.

A user of the Omni8/16/30 range of products can use the failure rates presented in this report in to determine Safety Integrity Level (SIL) of the entire safety function.

5. DISCLAIMER

This datasheet provides reliability figures only. Omniflex does not assume responsibility for the correct and safe application of the Omni8/16/30 range of products or their reliability data. In safety-related applications, it is the user's responsibility to comply with all other requirements of EN61508, which may be applicable to the safety system in question.

Omniflex reserves the right to change specifications without notice.