

# G.M. International Intrinsically Safe Isolators

**D5040D****D5232Q**

## Overview

G.M. International's D5000 series uses state-of-the-art solutions to achieve the highest performance for Intrinsically Safe applications and is recognized by more than 15 certification bodies all over the world.

Intrinsically Safe Galvanic Isolators provide the most simple and cost effective means of implementing Intrinsic Safety into hazardous area applications.

## Features

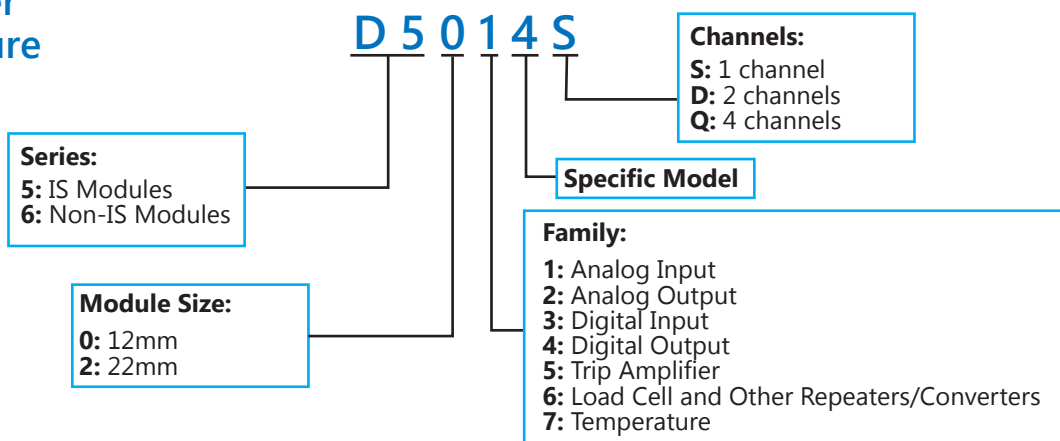
- Reduced foot print: high density, 6mm per channel
- Low power consumption
- Reduced cooling needs: low heat dissipation
- Suitable for indoor and outdoor use: certified -40 to +70 °C
- Resilience to surges: 2.5 kV isolation
- Resistant to harsh environments
- Lower ownership cost: certified for 20 years of operation

## G.M. International Intrinsically Safe Isolators Selection Guide

| Part Number                                                     | Price    | Isolator Type                    | Field Device                                         | Channels     | Controller Side (PLC/DCS)     | Drawing             |
|-----------------------------------------------------------------|----------|----------------------------------|------------------------------------------------------|--------------|-------------------------------|---------------------|
| <b>Analog Input (From Hazardous Area)</b>                       |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5014D</b></a>                                   | \$484.00 | Analog input repeater/splitter   | (2) 4–20 mA HART                                     | 2 in / 2 out | (2) 4–20 mA HART              | <a href="#">PDF</a> |
| <b>Analog Output (To Hazardous Area)</b>                        |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5020D</b></a>                                   | \$561.00 | Analog output repeater/splitter  | (2) 4–20 mA HART                                     | 2 in / 2 out | (2) 4–20 mA HART              | <a href="#">PDF</a> |
| <b>Digital (Discrete) Input (From Hazardous Area)</b>           |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5030D</b></a>                                   | \$291.00 | Digital input repeater/splitter  | (2) NAMUR* sensors<br>(2) dry contacts               | 2 in / 2 out | (2) Configurable contacts     | <a href="#">PDF</a> |
| <a href="#"><b>D5232Q</b></a>                                   | \$415.00 | Digital input repeater/splitter  | (4) NAMUR sensors<br>(4) dry contacts                | 4 in / 4 out | (4) Configurable contacts     | <a href="#">PDF</a> |
| <b>Digital (Discrete) Output (To Hazardous Area)</b>            |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5040D</b></a>                                   | \$369.00 | Digital output repeater/splitter | Up to 60 mA at 18.2 VDC                              | 2 in / 2 out | (2) 18–30 VDC                 | <a href="#">PDF</a> |
| <b>Temperature Transmitter (From Hazardous Area)</b>            |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5072D-096</b></a>                               | \$701.00 | Temperature repeater/splitter    | (2) Thermocouple                                     | 2 in / 2 out | (2) Equal to input            | <a href="#">PDF</a> |
| <b>Load Cell Strain Gauge Transmitter (From Hazardous Area)</b> |          |                                  |                                                      |              |                               |                     |
| <a href="#"><b>D5263S</b></a>                                   | \$749.00 | Load cell strain gauge repeater  | (4) 350Ω<br>or (5) 450Ω<br>or (10) 1000Ω in parallel | 1 in / 1 out | (1) Resistance equal to input | <a href="#">PDF</a> |

\* A NAMUR sensor is an intrinsically safe 2-wire sensor which supplies one of two signal levels depending on sensor state.

## Part Number Nomenclature



# G.M. International

## Intrinsically Safe Isolators



### G.M. International Intrinsically Safe Isolators Specifications

|                             |                                                            | <i>Digital Input</i>                                              |                                                                   | <i>Digital Output</i>                                                           |
|-----------------------------|------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                             |                                                            | <i>D5030D</i>                                                     | <i>D5232Q</i>                                                     | <i>D5040D</i>                                                                   |
| <b>Isolator Type</b>        |                                                            | Digital input repeater/splitter                                   | Digital input repeater/splitter                                   | Digital output repeater/splitter                                                |
| <b>Explosion Protection</b> | Installation Location (per NEC 500)                        | Zone 2 / Div 2                                                    | Zone 2 / Div 2                                                    | Zone 2 / Div 2                                                                  |
|                             | Ex Interface (per NEC 500)                                 | Zone 0 / Div 1                                                    | Zone 0 / Div 1                                                    | Zone 0 / Div 1                                                                  |
|                             | Agency Approvals                                           | UL, ATEX, FM, IECEx, SIL (TÜV), Maritime (DNV)                    | UL, ATEX, IECEx, Maritime (DNV)                                   | UL, ATEX, IECEx, SIL (TÜV), Maritime (DNV)                                      |
| <b>Safety Data</b>          | Max Voltage ( $U_o$ )                                      | 10.5V                                                             | 11.2V                                                             | 25.2V                                                                           |
|                             | Max Current ( $I_o$ )                                      | 22 mA                                                             | 12 mA                                                             | Output A: 146 mA<br>Output B: 108 mA<br>Output A+B: 254 mA                      |
|                             | Max Power ( $P_o$ )                                        | 56 mW                                                             | 34 mW                                                             | Output A: 916 mW<br>Output B: 676 mW<br>Output A+B: 1592 mW                     |
| <b>Functional Safety</b>    | Safety Integrity Level (SIL)<br>Systematic Capability (SC) | SIL 3 / SC3                                                       | –                                                                 | SIL 3 / SC3                                                                     |
| <b>Electrical Data</b>      | Number of Channels                                         | 2 in / 2 out OR 1 in / 2 out                                      | 4 in / 4 out OR 2 in / 4 out OR 1 in / 4 out                      | 2 in / 2 out OR 1 in / 1 out                                                    |
|                             | Auxiliary Power Range                                      | 18–30 VDC                                                         | 18–30 VDC                                                         | N/A (powered from input signal)                                                 |
|                             | Nominal Current                                            | 35 mA @ 24 VDC<br>with short circuit input<br>and relay energized | 75 mA @ 24 VDC<br>with short circuit input<br>and relay energized | 45 mA @ 24 VDC<br>with 30 mA outputs                                            |
|                             | Max Power Dissipation                                      | 0.85W @ 24 VDC with short circuit input<br>and relay energized    | 1.8W @ 24 VDC with short circuit input<br>and relay energized     | 0.75W @ 24 VDC with 35 mA outputs                                               |
|                             | Operation Indication                                       | (2) Power LEDs<br>(2) Fault LEDs<br>(2) Status LEDs               | (1) Power LED<br>(4) Status/Fault LEDs                            | (2) Status LEDs                                                                 |
|                             | Input Type                                                 | (2) NAMUR sensors<br>(2) Dry contacts                             | (4) NAMUR sensors<br>(4) Dry contacts                             | (2) 18–30 VDC                                                                   |
|                             | Output                                                     | (2) N.O. contacts                                                 | (4) N.O. contacts                                                 | Output A: 30 mA @ 17.4V<br>Output B: 30 mA @ 16.3V<br>Output A+B: 60 mA @ 17.4V |
|                             | Output Max Load                                            | 4A @ 250 VAC/VDC                                                  | 2A @ 250 VAC/VDC                                                  | N/A                                                                             |
| <b>Ambient Conditions</b>   | Operating Temperature                                      | -40 to +70 °C [-40 to +158 °F]                                    | -40 to +70 °C [-40 to +158 °F]                                    | -40 to +70 °C [-40 to +158 °F]                                                  |
|                             | Storage Temperature                                        | -45 to +85 °C [-49 to +185 °F]                                    | -45 to +85 °C [-49 to +185 °F]                                    | -45 to +80 °C [-49 to +176 °F]                                                  |
| <b>Mechanical Data</b>      | Width                                                      | 12.5mm [0.5in]                                                    | 22.5mm [0.89in]                                                   | 12.5mm [0.5in]                                                                  |
|                             | Weight                                                     | 140g [4.94 oz]                                                    | 175g [6.18 oz]                                                    | 110g [3.88 oz]                                                                  |
|                             | Wire Gauge Range                                           | Up to 13 AWG                                                      | Up to 13 AWG                                                      | Up to 13 AWG                                                                    |
|                             | Mounting                                                   | DIN rail with or without power bus                                | DIN rail with or without power bus                                | DIN rail                                                                        |

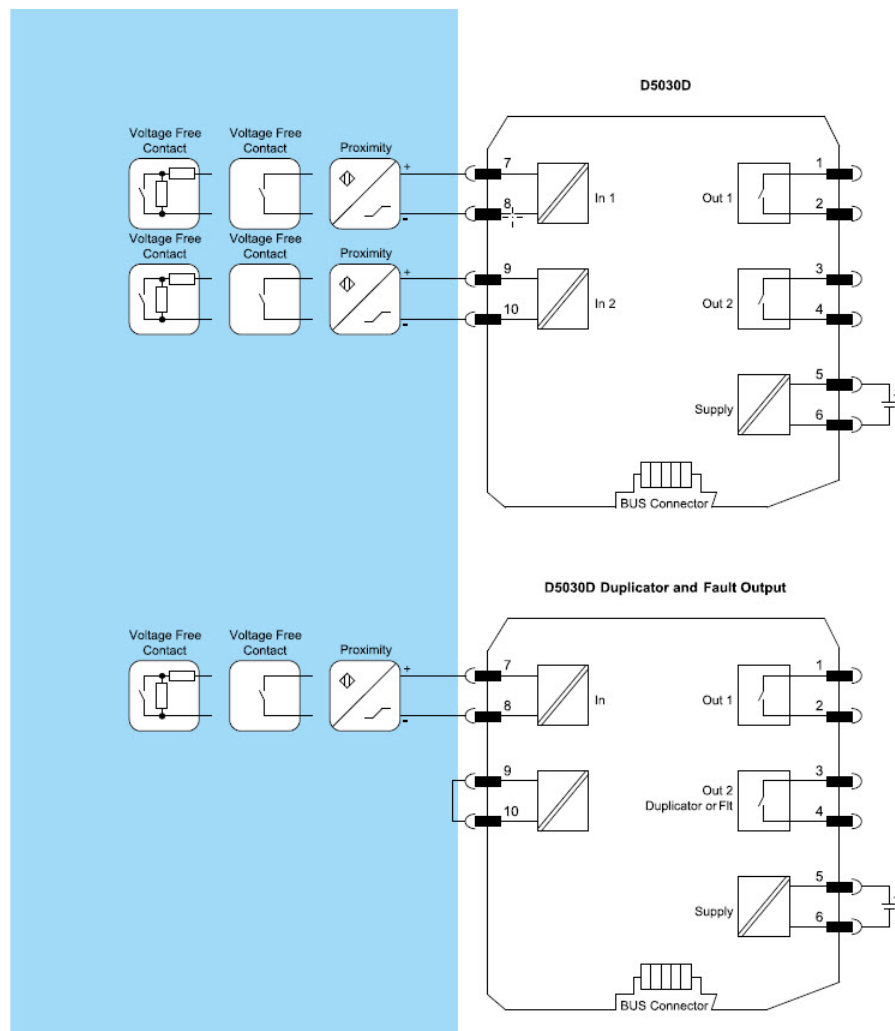
# G.M. International Intrinsically Safe Isolators



## Connection Diagrams (D5030D)

Hazardous Area

Safe Area / Zone 2 / Div. 2



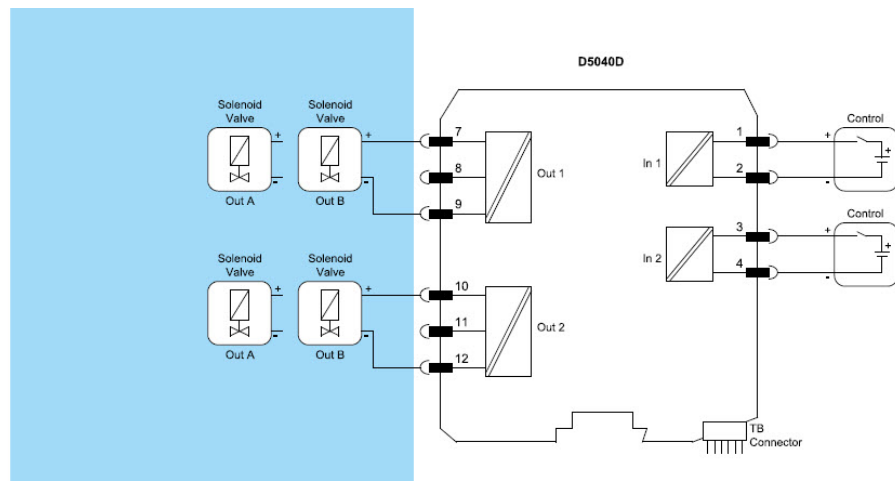
### NOTE:

The D5030D intrinsically safe isolator is configurable using DIP switches located under a removable panel on the side of the unit. For details on how to configure these DIP switches, please consult the product manual.

## Connection Diagrams (D5040D)

Hazardous Area

Safe Area / Zone 2 / Div. 2



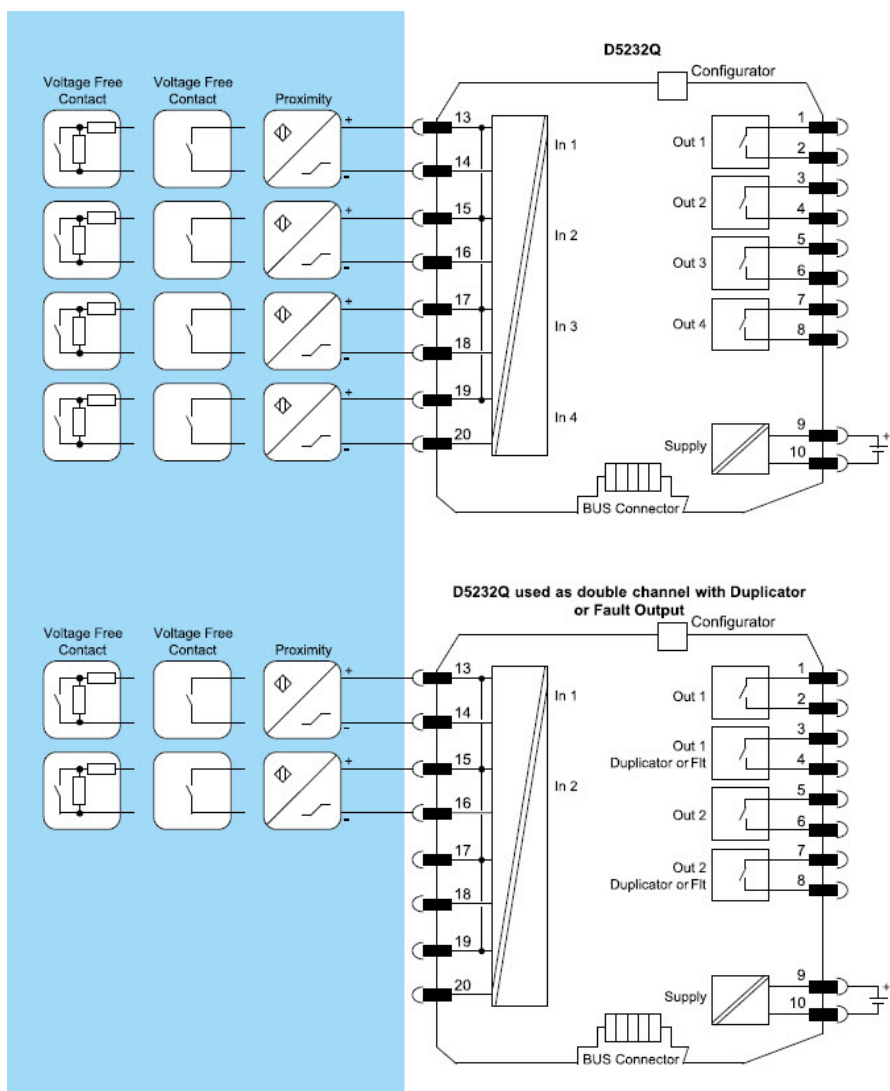
# G.M. International Intrinsically Safe Isolators



## Connection Diagrams (D5232Q)

Hazardous Area

Safe Area / Zone 2 / Div. 2



### NOTE:

The D5232Q intrinsically safe isolator is fully programmable. Operating parameters can be changed using a PC with the PPC5092 adapter (sold separately) and free SWC5090-SW software. For details, please consult the product manual.

- Quick, easy wiring
- Can be installed on standard DIN rail without tools by simply snapping into place
- Can be expanded at any time with additional power bus units
- Suitable for industrial environments subject to vibration

| G.M. International Intrinsically Safe Isolators Accessories |         |                                        |                      |                     |
|-------------------------------------------------------------|---------|----------------------------------------|----------------------|---------------------|
| Part Number                                                 | Price   | Description                            | For Use With         | Drawing             |
| <a href="#">JDFT049</a>                                     | \$22.50 | Power bus connector                    | D5000 12mm isolators | <a href="#">PDF</a> |
| <a href="#">JDFT050</a>                                     | \$28.00 | Power bus connector                    | D5000 22mm isolators | <a href="#">PDF</a> |
| <a href="#">OPT5096</a>                                     | \$37.00 | Mounting brackets and end terminal set | D5000 isolators      | <a href="#">PDF</a> |



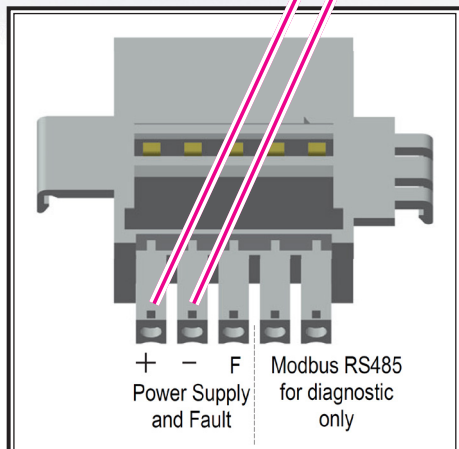
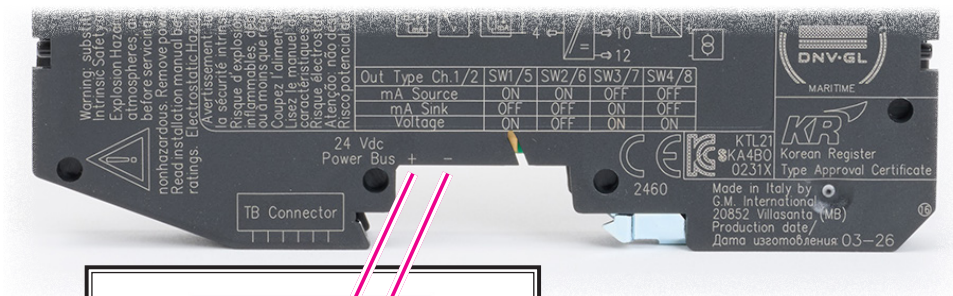
JDFT049



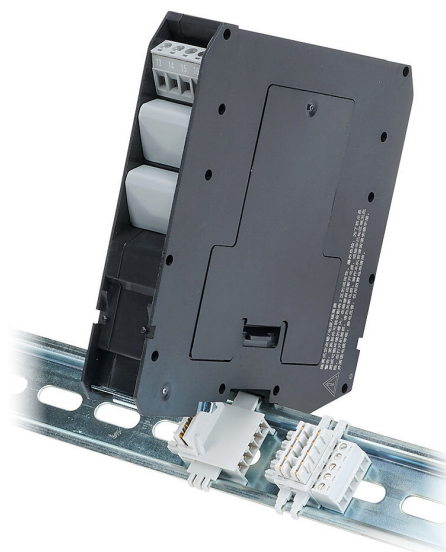
JDFT050

**OPT5096**

## Installation Detail For Power Bus Connectors



Several of these modules (including the [D5014D](#), shown here as an example) provide access to signals via the power bus. The signals that are available for each module are printed on the side of the unit.



# G.M. International Intrinsically Safe Isolators Configuration Software

**PPC5092**

Getting the most out of your D5232Q Digital Input Isolator and D5072D-096 Thermocouple/mV Repeater is easier than ever with the SWC5090-SW Configuration Software — a free PC-based tool designed to simplify setup, monitoring, and troubleshooting for your safety-critical field devices.

For the D5232Q, the SWC5090-SW software lets you configure sensor type (Proximity or Dry Contact) for each of the four inputs, set custom output logic and fault behavior, and monitor real-time input/output status on screen — all while supporting the performance your high-risk application demands.

For the D5072D-096, the software gives you full control over input/output function (Linear, Custom, or Thermocouple), cold junction compensation settings, burnout fault detection, and channel tagging, so your temperature signal repeating is precisely tuned to your process.

Both modules also benefit from the built-in Data Logger, which records live readings to a simple CSV file at your chosen interval, and the Report Sheet feature, which prints a complete configuration summary for easy documentation. Available at no cost and simple to install on any Windows PC, SWC5090-SW puts fast, reliable configuration of your D5232Q and D5072D-096 modules right at your fingertips.

## G.M. International Intrinsically Safe Isolators Configuration Cable

| Part Number    | Price    | Description         | For Use With          | Includes                                         | Drawing             |
|----------------|----------|---------------------|-----------------------|--------------------------------------------------|---------------------|
| <b>PPC5092</b> | \$178.00 | Configuration cable | D5232Q and D5072D-096 | Cable, USB adapter and SWC5090-SW software on CD | <a href="#">PDF</a> |

## SWC5090 Configurator



**NOTE: always use the USB to Serial adapter. A standard USB A to USB Mini cable to the PC will not work.**

## G.M. International Configuration Software

| Part Number       | Price | Description            |
|-------------------|-------|------------------------|
| <b>SWC5090-SW</b> | FREE  | Configuration software |

The screenshot shows the 'G.M. International - SWC5090 Configuration Software - D5232Q\D6232Q - \*' window. It has tabs for 'Configuration', 'Monitor', and 'Data Logger'. The 'Configuration' tab is active, showing 'Input and output configuration'. Under 'Inputs', there are four rows for Input 1 through Input 4. Each row has a dropdown menu for sensor type (Dry Contact or Proximity) and a checkbox for 'Fault on bus'. Under 'Tags', there are four rows for Tag 1 through Tag 4, each with a text input field. Under 'Outputs', there are four rows for Output 1 through Output 4. Each row has a dropdown menu for 'Source' (Input 1 through Input 4) and two dropdown menus for 'Contact position' (when input is open and in case of fault). There are also checkboxes for 'Fault repeater' with labels '- Open - in normal condition.' and '- Closed in fault condition.'

# Safety Products



*Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.*

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