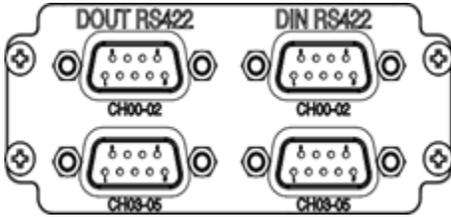# OP5969-1 RS422 Digital Inputs and Outputs (DIO)

The OP5969-1 is an I/O expansion option available for the OP4510, OP4512, and OP4610XG simulators and also for the OP4520 I/O expansion unit. The I/O Expansion connects to the rear-interface of the simulator and provides **4x DB9 connectors** containing **6 TX** and **6 RX** for **RS422 signals**. These signals are typically used to transmit differential encoder inputs and outputs.

- General Pin Assignments
- Specifications
  - RS422 Digital In
  - RS422 Digital Out

General Pin Assignments

DB9F Pin	RS422 OUT CH 00-02	DB9F Pin	RS422 IN CH00-02		DB 9F Pin	RS422 OUT CH 03-05	DB 9F Pin	RS422 IN CH03-05
1	TX0+	1	RX0+		1	TX3+	1	RX3+
2	TX1+	2	RX1+		2	TX4+	2	RX4+
3	TX2+	3	RX2+		3	TX5+	3	RX5+
4	N.C	4	N.C		4	N.C	4	N.C
5	+12V limited*	5	+12V limited*		5	+12V limited*	5	+12V limited*
6	TX0-	6	RX0-		6	TX3-	6	RX3-
7	TX1-	7	RX1-		7	TX4-	7	RX4-
8	TX2-	8	RX2-		8	TX5-	8	RX5-
9	DGND	9	DGND		9	DGND	9	DGND

*Same 12V for all the connectors. 400mA total

Specifications

RS422 Digital In

Number of channels	6 differential inputs
Detection threshold	± 0.5 V
Input current	± 3 mA
Delay Low-to-High	65 ns

RS422 Digital Out

Number of channels	6 differential outputs
High level (With load)	2.5 V min @ -20 mA
Low level (With load)	0.5 V max @ 20 mA
Delay Low-to-High	55 ns