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RENESAS TECHNICAL UPDATE

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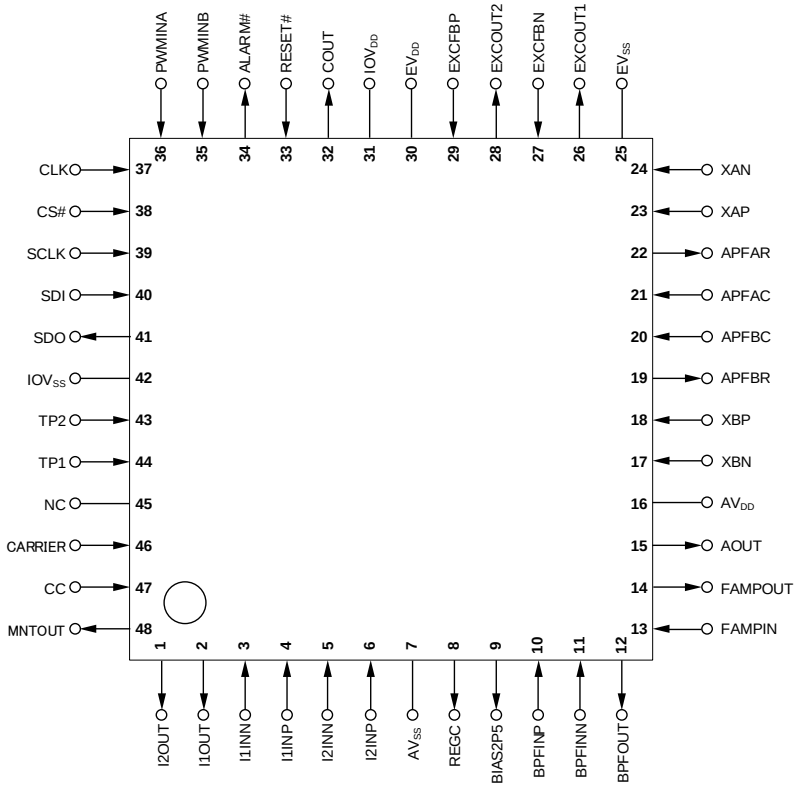
Product Category	Resolver Digital Converter IC		Document No.	TN-RDC-A0001A/E	Rev.	1.00
Title	Change of the function of a pin and correction of errors		Information Category	Technical Notification		
Applicable Product	RAA3064002GFP RAA3064003GFP	Lot No. All	Reference Document	Resolver-to-Digital Converters User's Manual: Hardware rev1.0 (r03uz0002ej0100)		

This document is to notify you of the change of the function of pin 45, the correction of errors in the user's manual of the applicable products. The function of pin 45 was changed from non-connection (NC) to LDO2P1 in Table1.3 (2/2), Figure 1.2, and Figure 2.3 in the above hardware manual. The errors in Table1.1, Table 1.3 (1/2), Figure 2.4, Figure 4.1, and Figure 4.2 were also corrected, and the description of section 4.1 was changed.

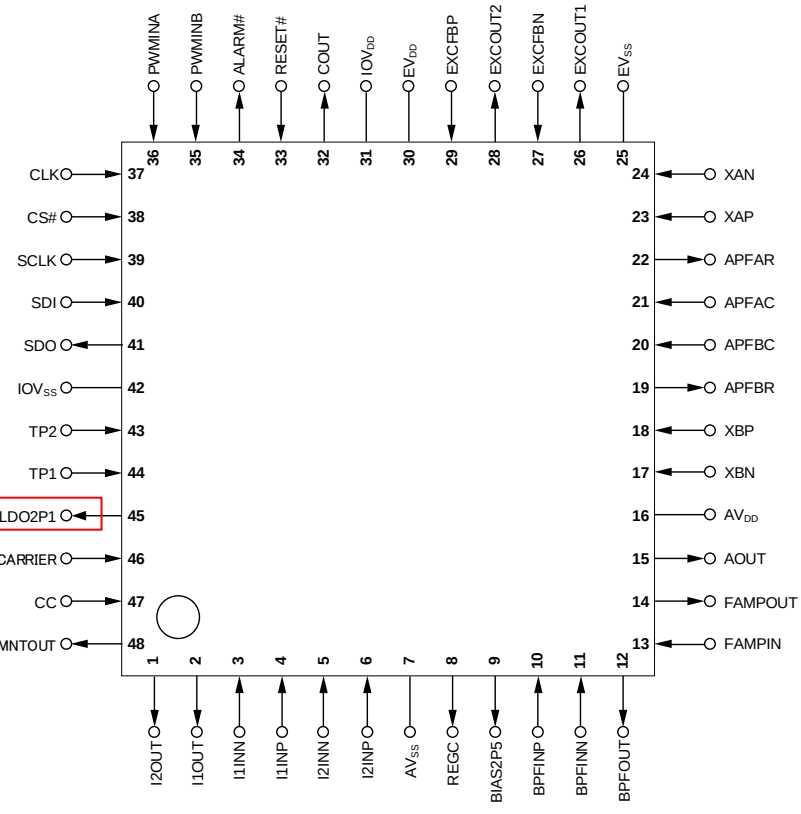
Page 5/51: Figure 1.2 Pin Assignment (Top View) was corrected as follows.

[Before Correction]



NC: Not connected internally. To prevent malfunctions due to noise, do not connect anything to these pins.

[After Correction]



LDO2P1: To prevent malfunctions due to noise, do not connect anything to this pin.

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The description for pin 45 in Table 1.3 List of Pin Functions (2/2) was corrected as follows.

[Before Correction]

Pin No.	Pin Name	Input/ Output	Function	Type	Power Supply	During and after a Reset
45	NC	—	—	—	—	—

[After Correction]

Pin No.	Pin Name	Input/ Output	Function	Type	Power Supply	During and after a Reset
45	LDO2P1	Output	Signal for monitoring the power supply to the internal circuit (non-connection)	Analog	AV_{DD}	Pull Down

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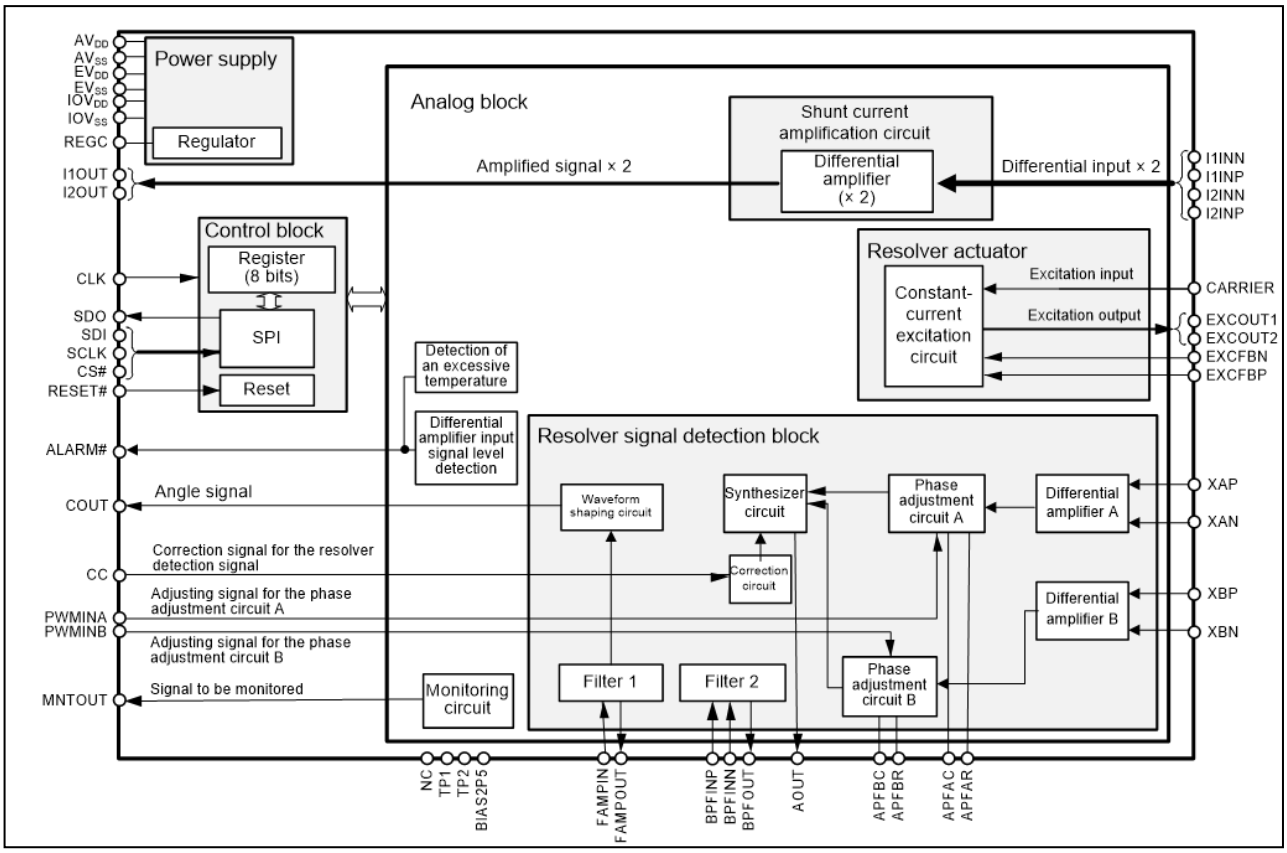
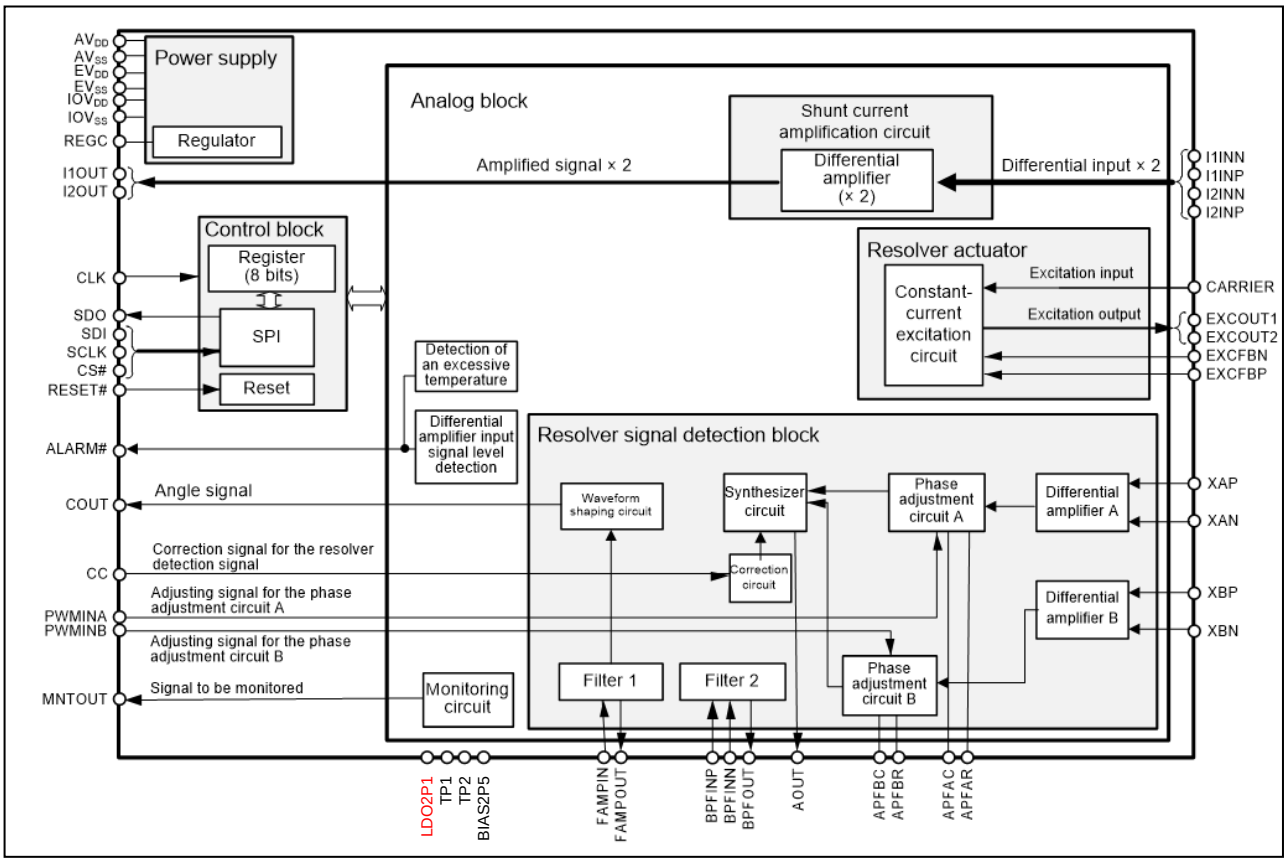
Figure 2.3 Internal Block Diagram was corrected as follows.

[Before Correction]



[After Correction]



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The order code in Table 1.1 was corrected as follows.

[Begore Correction]

Package	Operating Temperature Range	Order Code
48-pin plastic LQFP	-40°C to +85°C	RAA3064002GFP#BA0
48-pin plastic LQFP	-40°C to +105°C	RAA3064003GFP#BA0

[After Correction]

Package	Operating Temperature Range	Order Code
48-pin plastic LQFP	-40°C to +85°C	RAA3064002GFP#AA0 RAA3064002GFP#BA0 RAA3064002GFP#HA0
48-pin plastic LQFP	-40°C to +105°C	RAA3064003GFP#AA0 RAA3064003GFP#BA0 RAA3064003GFP#HA0

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The states of pins 8, 12, and 14 during and after a reset in Table 1.3 (1/2) List of Pin Functions (1/2) were corrected as follows.

[Before Correction]

Pin No.	Pin Name	Input/ Output	Function	Type	Power Supply	During and after a Reset
8	REGC	Output	Capacitor connection pin for reference voltage (pulling down to GND by 0.1 µF is recommended.)	Analog	AV_{DD}	Hi-Z
12	BPFOUT	Output	Output from the amplifier of filter 2	Analog	AV_{DD}	Hi-Z
14	FAMPOUT	Output	Output from the amplifier of filter 1	Analog	AV_{DD}	Hi-Z

[After Correction]

Pin No.	Pin Name	Input/ Output	Function	Type	Power Supply	During and after a Reset
8	REGC	Output	Capacitor connection pin for reference voltage (pulling down to GND by 0.1 µF is recommended.)	Analog	AV_{DD}	Pull Down
12	BPFOUT	Output	Output from the amplifier of filter 2	Analog	AV_{DD}	Pull Down
14	FAMPOUT	Output	Output from the amplifier of filter 1	Analog	AV_{DD}	Pull Down

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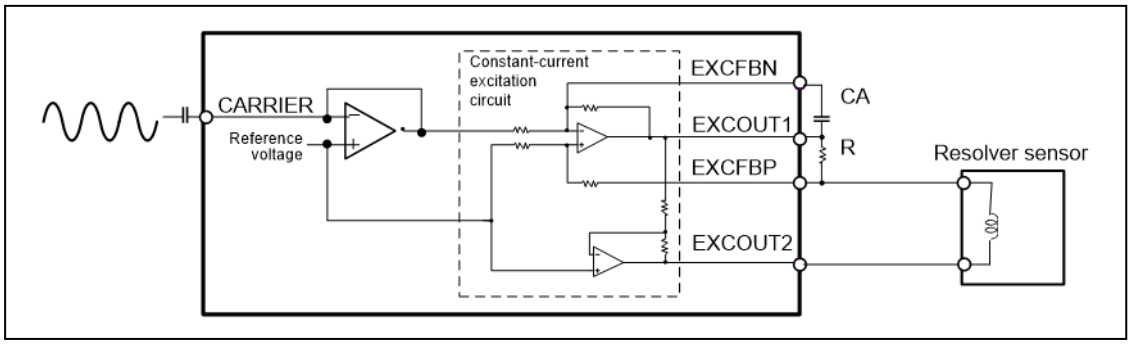
Figure 2.4 Resolver Actuator was corrected as follows.

[Before Correction]



[After Correction]

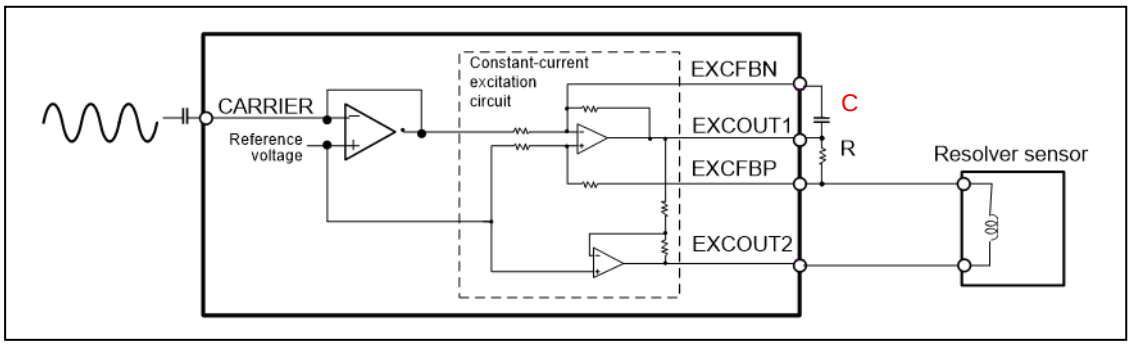


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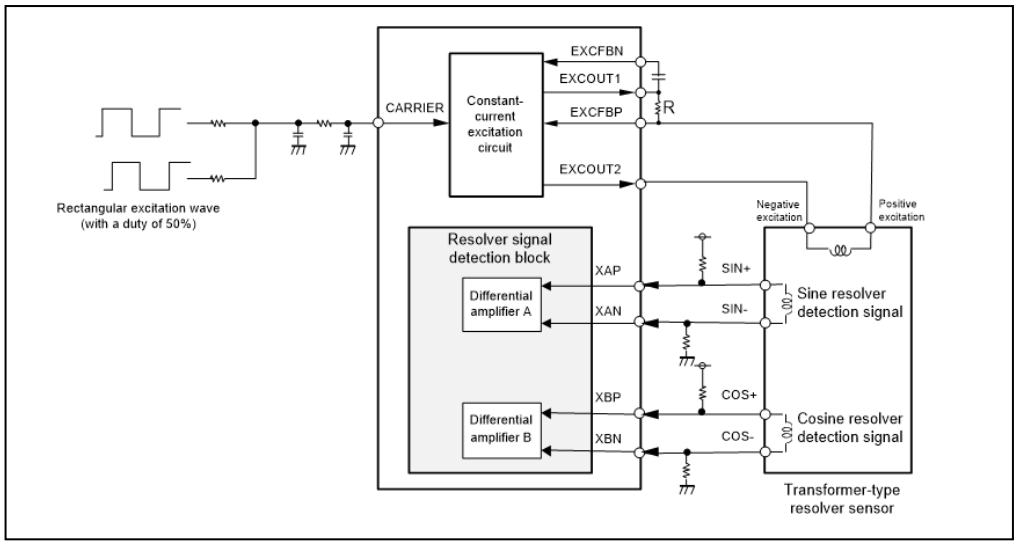
Figure 4.1 Example of Connection to a Transformer-Type Resolver Sensor is corrected as follows.

[Before Correction]



[After Correction]

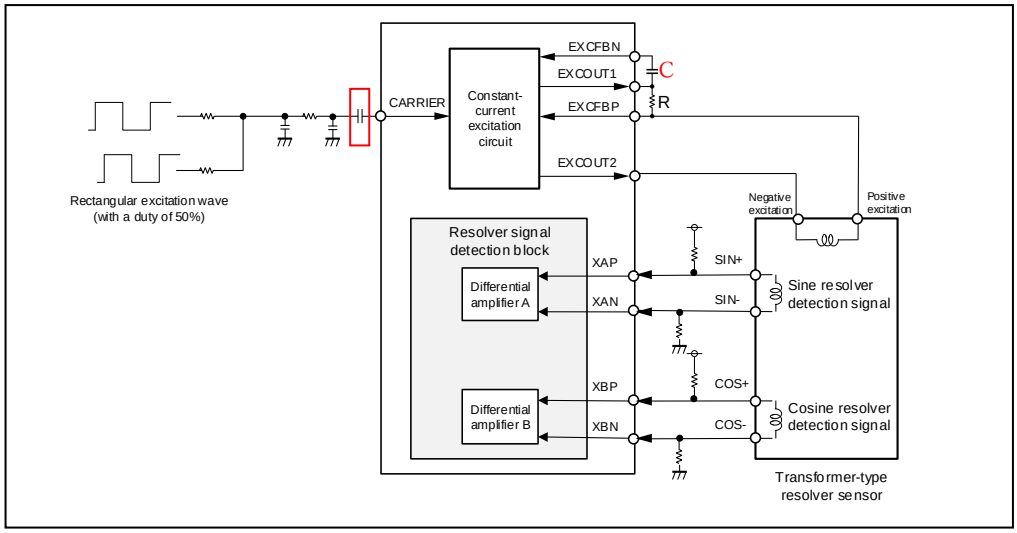


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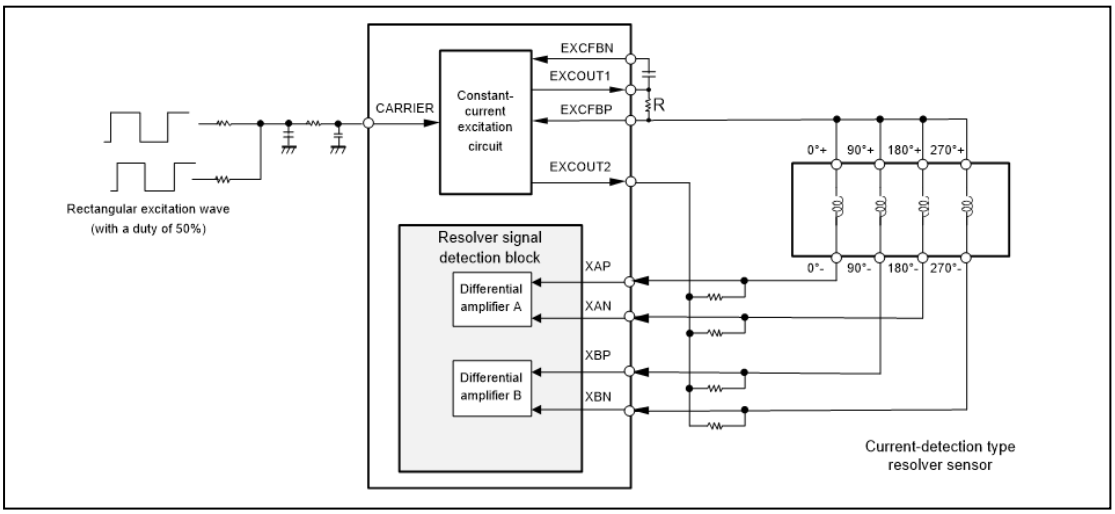
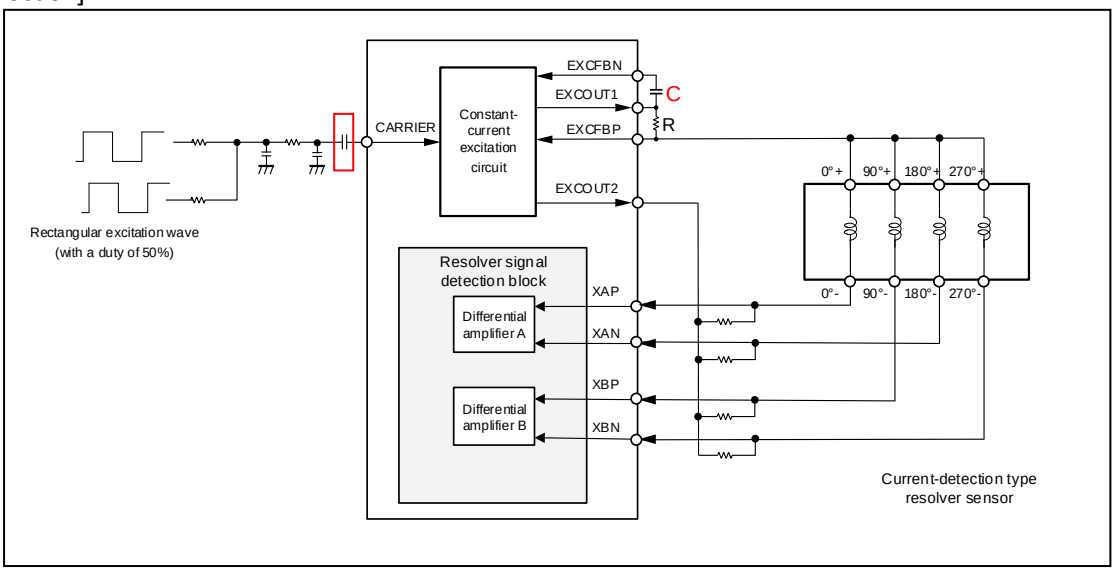
Figure 4.2 Example of Connection to a Current-Detection Type Resolver Sensor was corrected as follows.

[Before Correction]



[After Correction]



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The description of section 4.1, Basic Operation for Conversion of Signals from Resolver was corrected as follows.

[Before Correction]

This IC can be used to drive a single-phase excitation input and two-phase output type resolver sensor, and to convert the signals from the resolver sensor to digital signals.

Angle information can be obtained from the signal output by a resolver by using this IC with a host MCU. A rectangular excitation wave is output by the host MCU to drive the resolver. The rectangular excitation wave is converted to a sine wave by an external low-pass filter and input to this IC. The constant-current excitation circuit then outputs a constant current in accord with the period of the cycle for driving the resolver. Driven by the excitation signal, the resolver outputs the two-phase signals it has detected to this IC. Connection between the resolver sensor and this IC varies with the type of resolver sensor. Figures 4.1 and 4.2 show examples of the connections.

[After Correction]

This IC can be used to drive a single-phase excitation input and two-phase output type resolver sensor, and to convert the signals from the resolver sensor to digital signals.

Angle information can be obtained from the signal output by a resolver by using this IC with a host MCU. A rectangular excitation wave is output by the host MCU to drive the resolver. The rectangular excitation wave is converted to a sine wave by an external low-pass filter and input to this IC through a capacitor. The constant-current excitation circuit then outputs a constant current in accord with the period of the cycle for driving the resolver. Driven by the excitation signal, the resolver outputs the two-phase signals it has detected to this IC. Connection between the resolver sensor and this IC varies with the type of resolver sensor. Figures 4.1 and 4.2 show examples of the connections.

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