

G9SP Series Safety Controller Operation Manual Correction Notice

August 24, 2015

Affected Products:

G9SP Programmable Safety Controllers: G9SP-N10S, G9SP-N20S, G9SP-N10D

Affected Manual(s):

All G9SP Series Safety Controller Operation Manuals prior to [G9SP Series Safety Controller Operation Manual Z922-E1-05](#).

Affected Page / Section:

Page 54 / 3-2-2 Local Input and Local Output Reaction Times - Reaction Time Formula

Action Required:

The following values and calculations have been modified; please verify all safety information relevant to:

- Reaction time related to OMRON Safety Sensors/Switches.

Updated Manual:

[G9SP Series Safety Controller Operation Manual](#)

Z922-E1-05.pdf

Appendix

Manual Corrections:

Correction of the OMRON Safety sensor/switch response time.

Before	<p>The safety sensor/switch reaction times are given below for when OMRON Safety Sensors or Switches are connected directly to the G9SP-series Controller.</p> <p>E3ZS or E3FS Single Beam Safety Sensor: <u>10 ms</u></p> <p>D40A Non-contact Switch: $6 \text{ ms} + 0.4 \text{ ms} \times \text{Number of connected Switches}$</p> <p>D40Z Non-contact Switch: $6 \text{ ms} + (\text{Cycle time} \times 2) \text{ ms}$</p> <p>UM Safety Mat: <u>10 ms</u></p>																												
After	<p>The safety sensor/switch reaction times are given below for when the following OMRON Safety Sensors or Switches are connected directly to the G9SP-series Controller.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Connected device</th> <th style="text-align: left;">Safety Sensor/Switch reaction time</th> <th style="text-align: left;">Cycle Time</th> </tr> </thead> <tbody> <tr> <td rowspan="3">E3ZS/E3FS Single-beam Safety Sensors</td> <td><u>$2\text{ms} + (\text{Cycle Time} \times 3)\text{ms}$</u></td> <td><u>$\text{Cycle Time} = 4\text{ms}$</u></td> </tr> <tr> <td><u>$2\text{ms} + (\text{Cycle Time} \times 2)\text{ms}$</u></td> <td><u>$5\text{ms} \leq \text{Cycle Time} \leq 9\text{ms}$</u></td> </tr> <tr> <td><u>$2\text{ms} + (\text{Cycle Time} \times 1)\text{ms}$</u></td> <td><u>$10\text{ms} \leq \text{Cycle Time}$</u></td> </tr> <tr> <td>D40A Non-contact Switch</td> <td>$6 \text{ ms} + 0.4 \text{ ms} \times \text{Number of connected Switches}$</td> <td style="text-align: center;">-</td> </tr> <tr> <td rowspan="3">D40Z Non-contact Switch</td> <td><u>31ms</u></td> <td><u>$\text{Cycle Time} \leq 10\text{ms}$</u></td> </tr> <tr> <td><u>$(\text{Cycle Time} \times 3)\text{ms}$</u></td> <td><u>$11\text{ms} \leq \text{Cycle Time}$</u></td> </tr> <tr> <td><u>$(\text{Cycle Time} \times 2)\text{ms}$</u></td> <td><u>$5\text{ms} \leq \text{Cycle Time} \leq 8\text{ms}$</u></td> </tr> <tr> <td rowspan="3">UM Safety Mat</td> <td><u>$(\text{Cycle Time} \times 3)\text{ms}$</u></td> <td><u>$\text{Cycle Time} = 4\text{ms}$</u></td> </tr> <tr> <td><u>$(\text{Cycle Time} \times 2)\text{ms}$</u></td> <td><u>$5\text{ms} \leq \text{Cycle Time} \leq 8\text{ms}$</u></td> </tr> <tr> <td><u>$(\text{Cycle Time} \times 1)\text{ms}$</u></td> <td><u>$9\text{ms} \leq \text{Cycle Time}$</u></td> </tr> </tbody> </table>		Connected device	Safety Sensor/Switch reaction time	Cycle Time	E3ZS/E3FS Single-beam Safety Sensors	<u>$2\text{ms} + (\text{Cycle Time} \times 3)\text{ms}$</u>	<u>$\text{Cycle Time} = 4\text{ms}$</u>	<u>$2\text{ms} + (\text{Cycle Time} \times 2)\text{ms}$</u>	<u>$5\text{ms} \leq \text{Cycle Time} \leq 9\text{ms}$</u>	<u>$2\text{ms} + (\text{Cycle Time} \times 1)\text{ms}$</u>	<u>$10\text{ms} \leq \text{Cycle Time}$</u>	D40A Non-contact Switch	$6 \text{ ms} + 0.4 \text{ ms} \times \text{Number of connected Switches}$	-	D40Z Non-contact Switch	<u>31ms</u>	<u>$\text{Cycle Time} \leq 10\text{ms}$</u>	<u>$(\text{Cycle Time} \times 3)\text{ms}$</u>	<u>$11\text{ms} \leq \text{Cycle Time}$</u>	<u>$(\text{Cycle Time} \times 2)\text{ms}$</u>	<u>$5\text{ms} \leq \text{Cycle Time} \leq 8\text{ms}$</u>	UM Safety Mat	<u>$(\text{Cycle Time} \times 3)\text{ms}$</u>	<u>$\text{Cycle Time} = 4\text{ms}$</u>	<u>$(\text{Cycle Time} \times 2)\text{ms}$</u>	<u>$5\text{ms} \leq \text{Cycle Time} \leq 8\text{ms}$</u>	<u>$(\text{Cycle Time} \times 1)\text{ms}$</u>	<u>$9\text{ms} \leq \text{Cycle Time}$</u>
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