SIEMENS

QUICK GUIDE

GCP 5000 OUT OF SERVICE (OOS) OVERRIDE FEATURE

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VERSION A

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DOCUMENT HISTORY

Version	Release Date	Sections Changed	Details of Change
A	07/08/2020	N/A	Initial Release

NOTES, CAUTIONS, AND WARNINGS

Throughout this manual, notes, cautions, and warnings are frequently used to direct the reader's attention to specific information. Use of the three terms is defined as follows:

	WARNING
⚠ WARNING	**INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY. WARNINGS ALWAYS TAKE PRECEDENCE OVER NOTES, CAUTIONS, AND ALL OTHER INFORMATION.**

	CAUTION
⚠ CAUTION	REFERS TO PROPER PROCEDURES OR PRACTICES WHICH IF NOT STRICTLY OBSERVED, COULD RESULT IN A POTENTIALLY HAZARDOUS SITUATION AND/OR POSSIBLE DAMAGE TO EQUIPMENT. CAUTIONS TAKE PRECEDENCE OVER NOTES AND ALL OTHER INFORMATION, EXCEPT WARNINGS.

	NOTE
NOTE	Generally used to highlight certain information relating to the topic under discussion.

If there are any questions, contact Siemens Mobility, Inc. Application Engineering

1.0   GENERAL INFORMATION

This quick guide provides information for utilizing the GCP 5000 Out Of Service (OOS) override feature.

1.1   OUT OF SERVICE OVERRIDE

The GCP 5000 has a feature which helps protect against a track left out of service, resulting in no crossing activation if a train approaches on the out of service track.

The program parameter 'Train Line Speed' is used to control this feature.

⚠ WARNING

WARNING
IF THE 'TRAIN LINE SPEED' IS SET TO 0, THE OUT OF SERVICE OVERRIDE FEATURE DISABLED.

If 'Train Line Speed' is not 0, the out of service override is enabled. If a train is detected that is going faster than 80% of the programmed train line speed for more than 5 seconds then all out of service tracks and islands controlled by that GCP will be put back into service.

The Train Line Speed should be set accordingly, so if there are various speed trains on the crossing, for example, a mixture of freight and passenger, then freight trains could also put the track back in service, if desired. In other words, the programmed Train Line Speed needs to be applicable to both train types and account for the difference in their speed.

⚠ WARNING

WARNING
THE OUT OF SERVICE OVERRIDE IS NOT FAIL SAFE, IT SHOULD NOT BE RELIED ON TO PUT A CROSSING BACK INTO SERVICE, ITS PURPOSE IS TO PROVIDE AN EXTRA LAYER OF PROTECTION IN SOME CASES.

The GCP requires 5 seconds to initially determine the correct train speed when the train enters the approach, especially in cases where the train comes over a joint. The GCP will then need to see the train speed above the threshold for a further 5 seconds before the out of service disable feature will operate. In general, if the train is not on the approach for at least 10 seconds, the GCP may not override the out of service condition.

Note that if the GCP has a track at the crossing and remote track DAXing to the crossing, if both the remote track and the crossing track are taken out of service, then a train approaches on the remote track, the override out of service feature will put all the tracks in the crossing back into service.

⚠ WARNING

WARNING
IF THE TRAIN IS NOT ON THE GCP TRACK FOR AT LEAST 10 SECONDS, THE GCP MAY NOT BE PUT BACK INTO SERVICE.

The GCP does a check to make sure that the computed approach length is consistent with the largest warning time of any predictor on that track and train line speed as follows

- Computed Approach length >= (Largest Predictor Warning time + 5) x (train line speed)

Where the train line speed is in ft/sec in the above calculation.

If this check fails, the GCP will display the following warning on the Display Module:

Approach Length Error (Diag1204)

Cause:

The GCP Computed Approach Length is too short. It needs to be at least the train line speed x (predictor warning time + 5)

Remedy:

a) Check the train line speed has been set correctly

b) Check the approach length has been set correctly

This warning may be seen in cases where there is a shortened track approach due to an insulated joint and the crossing is being DAXed to, as the computed approach distance of the short track is less than required to give the requisite warning time for a full speed train.

NOTE
NOTE The above warning (Diag1204) will not cause the GCP and the crossing to activate.

If this is the case, either the feature can be turned off by setting 'Train Line Speed' to 0, or a lower value of 'Train Line Speed' used. See the associated warning above that the train needs to be on the track for at least 10 seconds for the feature to be useful.

Overriding the out of service condition also has limitations when out of service inputs are used with no additional input from the user via the Display module as described below.

WARNING
WARNING **IF THE 'OOS CONTROL' IS SET TO 'OOS IPS' OR '5000 CASE OOS IP' AND THE OOS INPUT IS ENERGIZED WHEN A TRAIN IS DETECTED THE OUT OF SERVICE IS OVERRIDDEN, HOWEVER IF THE CPU IS REPOWERED (OR SWITCHED TO THE OTHER SIDE IN A REDUNDANT SYSTEM) AND THE OOS INPUTS ARE STILL ENERGIZED, THEY WILL TAKE THE GCP OUT OF SERVICE AGAIN.**

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