

354083 Measurement Correction Factor Programming Guide

Scope:

Two interface commands have been created to allow SPTS to experiment with use of a correction factor to align pressure readings from the GP 354083 module with their current gauge. The factor is a divisor of the measured pressure, i.e. the corrected pressure is the measured pressure divided by the correction factor. The factor is applied gradually through a linear interpolation over a “blend range” of pressures so that a discontinuity is not observed at the transition from uncorrected to corrected readings. The factor is fully applied at pressures below the blend range. The “IFC” command allows the operator to set the scale value of the correction factor, and the “IFR” command sets the pressure limits of the blend range. Blend range values are in units of Torr, mbar or Pascal, corresponding with the units setting in the module. The IFC command should be performed before the IFR command, as the IFC value is used in the range limit calculation of the blend range.

Command Protocol:

Set Correction Factor:

IFC W <correction factor> <CR>

The correction factor may be set in a range from 0.1 to 9.99. A “Nak” symbol (“0x15<CR>”) is returned if the entry is set outside this range.

Example: Set correction factor to 2.41

IFC W 2.41 <CR>

Response: “Ack” symbol (“0x06<CR>”).

Query Correction Factor:

IFC <CR>

The correction factor may be queried by simply entering the command with no parameters.

Example: Query Correction Factor

IFC <CR>

Response: IFC 2.410 <CR>



Brooks Automation, Inc.
Granville-Phillips Products
6450 Dry Creek Parkway
Longmont, CO 80503-9501
Phone: 1-303-652-4400 or 1-800-776-6543

Addendum
Part Number 185516
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Set Blend Range:

IFR W <lower limit>,<upper limit><CR>

The upper limit of the blend range is 1.0e-03 Torr. The lower limit is calculated by multiplying the Correction Factor by 1.001E-09. Entries outside of the allowed range are coerced to the limits described here. If the blend range limits are entered in the wrong order, the firmware will select the lower of the two pressures as the lower limit and the higher of the two pressures as the upper bound. Entries must be made in currently selected units (Torr, PA, mbar).

Example: Set the blend range to blend in the correction factor between 1E-7 Torr and 5E-6 Torr.

IFR W 1E-7,5E-6<CR>

Response: "Ack" symbol ("0x06<CR>").

Query Blend Range:

IFR<CR>

The blend range may be queried by simply entering the command with no parameters.

Example: Query the blend range.

IFR<CR>

Response: IFC Blend Range (<units>): 1.00E-07,5.00E-06<CR>



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