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RELEASE NOTES

GP300 GRAPHIC PRINTER / CHART RECORDER

Firmware Release RMS1780-00-H

These release notes contain important information about the new firmware and how it will affect the performance of instruments in which it is installed. The notes include information about enhancements, adaptive changes, and corrections to known problems. Please read this documentation carefully.

> **NOTE:** *The organization of the non-volatile memory (NVM) in this firmware revision differs from that of the previous one(s). On the first power-up or reset after installation of the new firmware, the NVM will be automatically reinitialized to default settings.*

1.   Modifications to real-time data transmission from the GP300

1.1   All data values are transmitted encoded in 2's complement format, using 2 bytes per value, MSB first.

8-bit and 12-bit resolution values occupy the full 2 bytes. When the source is either *analog* or *digital indirect*, original values are sign-extended. Values of *digital direct* channels are transmitted exactly as received from the host computer.

1.2   Transmission of an ID frame is automatically requested after the *data output port* is selected (either from the TOI, or through the remote control port via command 'DOP' [32_{hex}]). The first I-frame due for transmission after the selection of the data output port, will be made an ID frame. After this, the normal sequencing of ID-frames will be re-established – i.e., every *n* data frames, where *n* is the *repetition period of ID frames* configuration parameter.

1.3   The *ID block* in the text field of transmitted data frames now includes a bit map of the channels that are being transmitted. This is a long word (32 bits) in which the bit representing 2^n is 1 if data for channel *n* is in the data block.

For example, the bit map

```
msb                      lsb

0 0 0  ....... 0 1 0 1 0 1 1
```

indicates that channels 0, 1, 3, and 5 are on.

The bitmap has been added to the ID block, between the *transmission period* and the *time stamp* – see the table below.

1.4   ID frames, text field, ID block: the first entry has been changed from *source* ("*ANLG*") to *reserved* ("*RSVD*").

1.5   ID frames, text field, ID block: the channel *name* entry now contains the full 16-character channel identification label. In previous revisions, only the first 8 characters were included.

Summary of the structure of the ID block in the text field of ID frames, after modifications:

Field	Data type	Additional comments
Reserved	ASCII (4 chars.)	Reserved for future use – 'RSVD'
# of Channels, N	Byte	Number of channels included in each channel-set
# of Channel-Sets, M	Byte	Number of channel-sets included in each data block
Transmission Period, T	Word	Units are [x 10 msec]
Channel on/off bitmap	Long Word	Bit representing 2^n is 1 if data for channel n is included in data block
Time Stamp	ASCII (22 chars.)	YYYY/MM/DD HH:MM:SS.hh
CH_0 - Name	ASCII (16 chars.)	Channel identification label (or "name")
CH_0 - Module #	Byte	Module from which signal originates
CH_0 - Input #	Byte	Input number from which signal originates in the module
CH_0 -Range	Byte	0 ($\pm$10 V), 1 ($\pm$5 V), 2 (0 to +10V), 3 (0 to +5 V)
CH_0 – Gain	Word	0 (x1), 1 (x10), 2 (x100), 3 (x1000)
CH_0 - Resolution	Byte	0 (8 bits), 1 (12 bits), 2 (16 bits)
CH_0 - Sampling Rate	Long Word	Units are [Hz]
CH_0 - Sampling Mode	Byte	0 (triggered), 1 (autonomous)
CH_0 - A.A. Cut-off	Long Word	Cutoff frequency of anti-aliasing filter, in [Hz]
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CH_{N-1} - Name	ASCII (8 chars.)	
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CH_{N-1} - A.A. Cut-off	Long Word	

2.   Transmission of Configuration File

2.1   This firmware version supports transmission of the GP300's *working* configuration file via serial port A. A new command in the *binary command set*, TXCF ($3B_{hex}$), has been assigned to request the transmission of the configuration file.