Intended use:

This document aims to inform on some additional features to make use of Sylvac *Bluetooth*® technology[1] enabled products smarter.

To the attention of:

Developers who want to integrate Sylvac instruments with *Bluetooth*® *technology* to their custom apps or software solutions.

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[1] "The *Bluetooth*® word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Sylvac is under license. Other trademarks and trade names are those of their respective owners."

Saver mode

Availability: Sylvac *Bluetooth*® equipped instruments since firmware rev. July 2014
OEM *Bluetooth*® equipped instruments since firmware rev. July 2014

Default state: Inactive

Description

Saver mode is a smart data transfer mode. If enabled, the instrument only sends data to the master when the displayed value changes (sync on connection interval). On the other side, a continuous mode sends data even if it is not required or if there is no measuring activity by the user.

Implementation

- To enable this feature, the master software must send the command “SVR1[cr]”
- The saver mode is automatically disabled when disconnection occurs, regardless of the disconnection reason
- When saver mode is enabled, the instrument will send a data at every connection interval for new measured values
- Data is sent through “RemoteResp” characteristic (Notify, no acknowledgement, see profile specifications for UUID)
- To disable this feature, the master software can send the command “SVR0[cr]”

Energy efficient mode

Availability: Sylvac *Bluetooth*® equipped instruments since firmware rev. 4.xx
OEM *Bluetooth*® equipped instruments on request

Default state: Inactive

Description

This function allows the instrument to reduce current consumption (by slightly degrading some of its performances).

When connected by *Bluetooth*®

- Change timing request is sent to master
  - Conn interval from 120-140ms to 150-170ms
  - Slave latency from 0 to 2
  - Timeout stay 1s
- If accepted, decrease display refresh rate and set standby entry delay from 10 to 1min then response to command ECO? is ECO1
- Else, abandoned procedure and response to command ECO? is ECO0

When connected by cable

- Decrease display refresh rate and set standby entry delay from 10 to 1min then response to command ECO? is ECO1

Implementation

- To enable this feature, the master software must send the command “ECO1[cr]” (parameter saved in flash memory)
- To disable this feature, the master software can either
  - send the command “ECO0[cr]” (parameter saved in flash memory)
  - or apply a factory reset (command “FACRST[cr]”)

Remark

Influence on *Bluetooth*® data transmission modes:

Mode	Max data rate (ECO0)	Max data rate (ECO1)
Push	manual (no visible effect)	manual (no visible effect)
Saver	~4 data/s	~3 data/s
Request/Timer	~8 data/s	~2 data/s

Influence on cable data transmission modes: None

Advertisement Idle

Availability: Sylvac *Bluetooth*® equipped instruments since firmware rev. 4.xx
OEM *Bluetooth*® equipped instruments on request

Default state: Active

Description

This function allows the instrument loaded with the SIMPLE profile (no pairing) to enable a second phase of advertisement without timeout (interval 7s, timeout ∞). The instrument is visible for connection every 7s within a configuration similar to paired profile. Be aware that during this advertisement state, any master can (re)connect this instrument as the SIMPLE profile is used.

Implementation

- To disable this feature, the master software must send the command “ADVI0[cr]” (parameter saved in flash memory)
- To enable this feature, the master software can either
  - send the command “ADVI1[cr]” (parameter saved in flash memory)
  - or apply a factory reset (command “FACRST[cr]”)

Remark

When ADVI is enabled, it is recommended to remove the instrument by sending “BT0[cr]” instead of “BTRST[cr]” for being able to reconnect it at any time.

Bluetooth reset will make the instrument acting as a “first connection” (which will not take into account the ADVI status so the advertisement will stop after 3min).

Summary

Set of commands

Command	Parameters	Description
SVR	0/1/?	Saver transmission mode (disable/enable/state)
ECO	0/1/?	Energy efficient mode (disable/enable/state)
ADVI	0/1/?	Advertisement idle option (disable/enable/state)

Advisable way of use

Advertisement idle:

State	Measurement configuration
ON	Single fixture. Needed to recover instrument configuration at software start-up without any action on the instrument.
OFF	Multiple fixtures. Needed to connect the same instrument on many fixtures. Prevent the risk for others masters to pick-up unused instrument which is part of an existing configuration when creating a new configuration.