

PM4 Operation

General Description:

The PM4 is a performance monitor for the Concept2 Rowing Machine. It is compatible with the Models D and E Rowing machine as shown at www.concept2.com. The Performance Monitor allows the user to set up a workout and monitor their progress. Progress is reported in time, meters rowed, calories, watts, stroke rate, and heart rate. Many features of the monitor are described in the users manual.

PM4 Connectivity Options

The PM4 contains several external interface connections:

- 1) USB 1.1 connection for attachment to a Windows or Mac PC
- 2) Connector for attachment of cord extending to Acumen or Polar HeartRate receiver
- 3) Qty 2 RJ45 connectors for RS485 communication between PM4 and PM4. This is used for “Racing” between two or more (up to 40) rowing machines.
- 4) ANT 2.4Ghz Transceiver (described below in PM4 Radio Functions).

PM4 Radio Functions

The PM4 contains a single-chip 2.4Ghz transceiver utilizing the [Nordic Semiconductor nRF24AP1 reference design](#). This chip will be used for the following functions, in order of likely use by the customer:

- 1) Reception of data from [Suunto](#) and [ANT SPORT](#) heart rate transmitting devices
- 2) Transceiver mode for communication between PM4 and up to 8 other PM4’s for the purpose of “Racing” between indoor rowers. This mode is activated by the user each time racing is desired and is automatically terminated after the race is complete. The race creator’s PM4 polls all other PM4’s in a request response fashion.
- 3) Transceiver mode for communication between a PM4 and a Personal Computer (with attached USB ANT peripheral) for the purpose of using the PC for internet racing and other third party applications such as data collection from the PM4. This feature would be controlled by manual launching of the application from the personal computer. This feature is not currently implemented nor is the USB ANT peripheral currently available.