# Message Definition

## QueryWorkOrderInfo

The QueryWorkOrderInfo message is sent via Hermes-Vertical from a machine to a Supervisory System to query the Work Order for a PCB or set of PCBs. Three scenarios are covered:

1. PCBs arrive within a Magazine
2. A stack of PCBs arrives
3. A PCB is inserted, and its barcode is known

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **QueryWorkOrderInfo** | **Type** | **Range** | **Optional** | **Description** |
| nodeQueryId | string | any string(minimum supported length: 80 bytes) | yes | Indicates the ID of QueryWorkOrder message. The ID must be unambiguous and e.g. can be a timestamp or a GUID. |
| nodeMachineId | string | any string(minimum supported length: 80 bytes) | no | ID / name of this machine for identifying it in a Hermes enabled production line. |
| nodeMagazineId | string | any string(minimum supported length: 80 bytes) | yes | Barcode of a magazine, required to identify the magazine. |
| nodeSlotId | int | 1 .. n | yes | Indicates the slot in the magazine, enumerated from bottom to top, beginning with 1. |
| nodeBarcode | string | any string(minimum supported length: 254 bytes) | yes | The barcode of the PCB |

GUID must match the regular expression

[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}

## SendWorkOrderInfo

The SendWorkOrderInfo message is sent via Hermes-Vertical from Supervisory System to machine to provide the Work Order and the initial Hermes data for a PCB or set of PCBs.

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| --- | --- | --- | --- | --- |
| **SendWorkOrderInfo** | **Type** | **Range** | **Optional** | **Description** |
| nodeQueryId | string | any string(minimum supported length: 80 bytes) | yes | ID of QueryWorkOrderInfo this message refers to. |
| nodeWorkOrderdId | string | non-empty string(minimum supported length: 80 bytes) | no | Identifies the work order for production of the PCB. |
| nodeBoardId | string | GUID(36 bytes) | yes | Indicating the ID of the available board |
| nodeBoardIdCreatedBy | string | non-empty string(minimum supported length: 80 bytes) | yes | MachineId of the machine which created the BoardId (the first machine in a consecutive row of machines implementing this protocol). The MachineId is part of the Hermes configuration. |
| nodeFailedBoard | int | 0 .. 2 | no | A value of the list below |
| nodeProductTypeId | string | any string(minimum supported length: 254 bytes) | yes | Identifies a collection of PCBs sharing common properties |
| nodeFlippedBoard | int | 0 .. 2 | no | A value of the list below |
| nodeTopBarcode | string | any string(minimum supported length: 254 bytes) | yes | The barcode of the top side of the PCB |
| nodeBottomBarcode | string | any string(minimum supported length: 254 bytes) | yes | The barcode of the bottom side of the PCB |
| nodeLength | float | positive numbers | yes | The length of the PCB in millimeter. |
| nodeWidth | float | positive numbers | yes | The width of the PCB in millimeter. |
| nodeThickness | float | positive numbers | yes | The thickness of the PCB in millimeter. |
| nodeConveyorSpeed | float | positive numbers | yes | The conveyor speed used for the PCB transfer in millimeter per second |
| nodeTopClearanceHeight | float | positive numbers | yes | The clearance height for the top side of the PCB in millimeter. |
| nodeBottomClearanceHeight | float | positive numbers | yes | The clearance height for the bottom side of the PCB in millimeter. |
| nodeWeight | float | positive numbers | yes | The weight of the PCB in grams. |

GUID must match the regular expression

[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}

FailedBoard may be one of the following values:

1. Board of unknown quality available
2. Good board available
3. Failed board available

FlippedBoard may be one of the following values:

1. Side up is unknown
2. Board top side is up
3. Board bottom side is up