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7.1 Functional Description of Module

TFMs (Signal Modules and Points Modules) are connected to the Trackside Data Link by Data Link Modules (DLM), or, where a Long Line Link is used, sometimes by direct connection to a Long Distance Terminals (LDT); each DLM or LDT has 6 outputs and usually has connected up to 5 TFMs, with the sixth used as a test point to the Data Link, though in non-preferred cases all 6 have to be connected to TFMs with no test point provision.

Each TFM receives in turn serial data (telegrams) addressed to it via the Data Links from the CI and switches the corresponding power level outputs controlling conventional lineside signalling equipment. Each TFM then immediately replies to the CI giving the state of the trackside signalling, e.g. track section occupancy, and of the health of the TFM itself and of the Data Links.

The PM forms the power interface for direct drive of clamp lock type point machines; other types of point machine can be driven via interface relays. The PM also has inputs for point detection and for other signalling functions such as track sections, and performs various housekeeping functions, e.g. motor current timed cut off.

7.2 Module Details

A PM is mounted on trackside equipment case racking. The front of the module has a 75-way connector, a manufacturer's plate and 5 indicators for 'Power', 'System', 'Rx Data', 'Points X' and 'Points Y'. The power supply to the module is 110 Va.c. and 140 Va.c.

- The Power indicator is illuminated when 110Va.c. (BX110) input voltage is applied to the module.
- The System Indicator is illuminated when module is powered up and security fuse is intact.
- Rx Data indicator is illuminated when acceptable data is being received by the module.
- Points X indicator is illuminated when points X interface is available
- Points Y indicator is illuminated when points Y interface is available.

Both Westinghouse Rail Systems (WRSL) and ALSTOM Transport (ALSTOM) have manufactured PMs. References to WRSL shall include modules labelled 'Westinghouse Signals' where appropriate. References to ALSTOM will include modules labelled 'ALSTOM Signalling Ltd', 'GEC Alsthom Signalling Ltd' and 'GEC General Signal Ltd' where appropriate.

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Points Module (PM)

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WRSL MkII



ALSTOM MkII



WRSL Mk3



ALSTOM Mk3



WRSL MkIIIA

7.3 Module Variants

7.3.1 Spec. BR1901 for Mkl PMs

These were used in the Category 1A scheme at Leamington Spa only, which has now been replaced. They are not to be used on any other Network Rail scheme.

7.3.2 Spec BR1901A for MkII PMs

BR Mod. State	Modification Details	Installed Program	Limits on Usage
1	Not used	-	-
2	Original Issue of BR1902A Module	SSI4312-B3	Used at Inverness only. Special procedures required at manufacturer.
3	As 2 with Software Change	SSI4312-B4	Used at Inverness only. Special procedures required at manufacturer.
4	As 3 with Hardware modification to earthing and Software change	SSI4312-B5	Used at Inverness only. Special procedures required at manufacturer.
5	Revised Hardware (ALSTOM modules)	SSI4312-B5	Not to be used with LDTs
6	Revised Hardware (WRSL modules)	SSI4312-B5	Not to be used with LDTs