Cable Colours in Machines

The introduction of EN 60204-1 *Safety of Machinery — Electrical requirements of machines,* as the main standard for electrical equipment on machines has led to some confusion in the UK about the correct colour for cables used in machines.

The practice in many companies has been to use IEE cable colours for wiring machines. However this practice has now been called into question by the 1998 edition of EN60204-1 and new advice from the HSE.

EN 60204-1: 1998 states in clause 14.2.2 that the protective conductor should be coloured GREEN-AND-YELLOW.

In 14.2.1 the standard states for safety reasons the colour GREEN or the colour YELLOW should not be used where there is a possibility of confusion with the bicolour combination GREEN-AND-YELLOW. This calls into question the use of YELLOW as one of the three phases in IEE colours.

In 14.2.3 the standard states where a circuit includes a neutral conductor identified by colour, the colour shall be LIGHT BLUE. LIGHT BLUE shall not be used for identifying any other conductor where confusion is possible.

The HSE confirms that in its view for safety reasons, the colour of the protective conductor should always be GREEN-AND-YELLOW and the colour of the neutral should always be LIGHT BLUE.

The HSE is more relaxed about the colour of other conductors, however it points out that IEE colours should really only be used for the electrical installation in a building and not be used in a machine.

This is in the same way that IEE colours will be used for a ring main in a house, but the single phase appliances connected to the ring main will be coloured BROWN, LIGHT BLUE and GREEN-AND-YELLOW.

EN 60204-1 states It is recommended that insulated conductors be colour coded as follows:

* BLACK: a.c. and d.c. power circuits;
* RED: a.c. control circuits;
* BLUE: d.c. control circuits
* ORANGE: interlock control circuits supplied from an external power source.

EN60204-1 IEC60204-1 CABLE COLOURS

BLACK: a.c. and d.c. power circuits;
RED: a.c. control circuits;
BLUE: d.c. control circuits
ORANGE: interlock control circuits supplied from an external power source.
LIGHT BLUE: neutral
GREEN-AND-YELLOW: protective conductor.

To comply with these requirements, many companies will need to amend their purchase documents and specifications. However conforming to one internationally agreed cable colour standard would have benefits for all companies in the long run, removing the confusion, additional costs and risks of working to different wiring codes.

BS EN 60204-1: 1998 IEC 60204-1: 1997 is available from BSI Standards — (Tel: 020 8996 9000) price £112.00.

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