

Flat-tery could get you everywhere

When installing handling systems, there are many situations when a flat cable system can offer significant financial and operational benefits over the more traditional round cable. Paul Considine of Wieland Electric explains



At a time when it's important to source best value – in terms of both installation costs and ongoing life cycle costs – there is a strong case for taking a fresh look at the cabling that is used with conveyors and other handling systems. In particular, there are good reasons for using flat cable in many projects, but very often the specifier is unaware of these benefits.

From the outset, it's important to state that this is very much a matter of horses for courses. Flat cable is ideal for decentralised systems but there will always be situations where a centralised system is the most appropriate configuration and round cable is the best option. Where flat cable is appropriate, the benefits and costs savings accrue from a number of different factors. Not least of these is installation time. Flat cable can be simply laid out on the system and tap-off points are made quickly and easily by clamping on the

connector and screwing it down for a 'plug and play' connection. In contrast, round cable has to be cut, stripped and terminated at each tap-off point – so the longer the cable runs and the more tap-off points there are, the greater the savings.

Taking this principle a step further, tap-off points can also be supplied compete with flying leads for connection straight to the motor starter. In fact, it is now possible to use a motor starter that clamps directly onto the cable, reducing installation time even further.

A further benefit of this plug and play approach is that the connections can be made by unskilled staff, as long they are subsequently checked by a qualified electrician. In this way, it's possible to make maximum use of the least costly labour and reduce installations costs accordingly.



Of course, there is always a balance with such things and flat cable is more expensive than round cable, so one element of choosing the most appropriate solution is to calculate all of the costs, rather than just the material costs. However, as in most projects the installation costs represent around 80% of the total project cost, it's clear that any approach that reduces installation time is going to pay for itself quite quickly.

In making such calculations, it's also important to bear in mind that with a centralised system and the need to run cable from each motor to the control panel, there will be considerably more cable used, so the material cost differences become more significant.

In addition, most flat cable offers the ability to include the control wiring in the same cable, so there is no need to carry out a separate cabling operation for the controls. In such cases, the control wiring should offer a choice of different types of control signal to suit the project.

Horses for courses

As noted above, flat cable won't always be appropriate as there will be situations where the layout of the mechanical systems just isn't suitable for providing the long runs where flat cable offers maximum benefits.

Which also raises another important point. Making the best use of flat cable requires a slightly different way of thinking and this needs to be incorporated from the early design stages. There aren't many situations where it would be cost-effective to replace an existing round cable system with flat cable without major reconfiguration of the mechanical systems.

For these reasons the ideal situation is for the mechanical systems to be designed to make optimum use of flat cabling. Clearly, this requires the designers of the mechanical systems to appreciate the key differences between the two systems. In some this may involve a redesign of the mechanical systems themselves, and several major users are already doing this because of the benefits they gain from flat cabling.

And these benefits extend beyond the installation to the cost of ownership as maintenance costs are greatly reduced and any reconfiguration of the system is also much easier.

Based on many projects in the UK and continental Europe, we calculate that it's reasonable to expect a 30% reduction in project planning costs, 70% savings in installation costs and a further 70% saving on start-up costs. So in cases where flat cable is appropriate, it's really worth taking a fresh look.

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KEY FACTS:

- Tap-off points are made quickly and easily with flat cable
- Installation costs represent around 80% of a total project cost
- No need to carry out a separate cabling operation for the controls

