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Customer newsletter of ABB drives and motors in the UK

energise

ESOS – get on board

With 13 approved ESOS assessment bodies announced, companies need to get on board and act now to ensure their energy usage is accounted for by the December 2015 deadline.

A long way off? Maybe, but with over 10,000 ESOS audits needed to make sure UK businesses comply, these assessment companies will be stretched to the limit and may not get to you in-time. That does not mean you are off the hook. Far from it. You will be sent a process map to complete which will look at electricity, gas, transport and all other energy uses.

"This is where you can get ahead of the game," says ABB's John Guthrie. "As electric motors account for some 60% of all electriciy used by industry and commerce, taking a critical look at your installed base could be the easiest way to account for a large portion of energy use under ESOS and save money at the same time."

An appraisal of the motors installed base would reveal which ones are running efficiently, which could benefit from speed control and which are doing nothing and can be turned off!

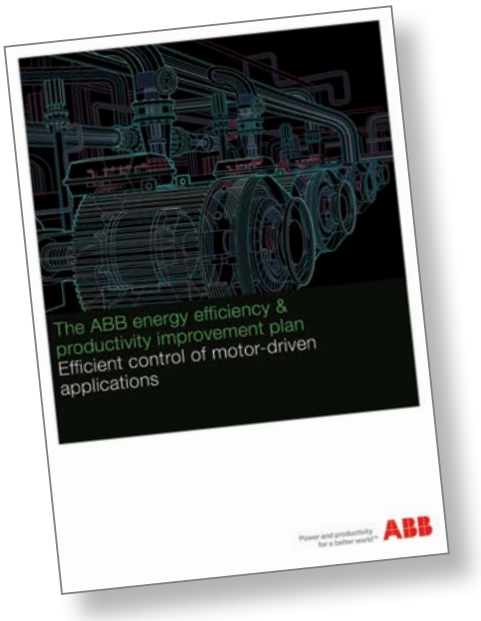
Visit www.abb.co.uk/energy or call John Guthrie on 07718 638 138

…next stop, energy sights of London

London's iconic landmarks are packed with ABB kit that is having an impact on energy, productivity and safety. An open top tour bus recently took the world's journalists on a guided tour calling at The Tate Modern, Tower Bridge, Imperial College and Claridges, among many others.

To get your FREE tour map of London showing ALL the iconic landmarks, email: energy@gb.abb.com

New savings plan launched at Energy Live 2014



A new Energy & Productivity Plan, launched by ABB, takes into account some of the requirements of the Energy Savings Opportunities Scheme (ESOS). The plan offers an in-depth snapshot of the energy saving and productivity improvement potential from a company's motor-driven applications, like pumps and fans.

Taking only half-a-day, the appraisal identifies up to five of the applications that could benefit the most.

It is not just energy that is considered in the appraisal. ABB engineers are able to look at any application driven by a motor, such as conveyors, mixers, elevators and even injection moulding machines and provide suggestions on how a variable-speed drive can enhance productivity. All of which will go a long way to impress the official ESOS energy assessors.

Visit www.abb.co.uk/energy or call John Guthrie on 07718 638 138

Power and productivity for a better world™

Viewpoint

Neil Ritchie, Divisional Manager, ABB Ltd.

In the last 10 years ABB's business and customer needs have been changing dramatically. Recognising this fact we have changed the emphasis of Energise to reflect these changes.

From just drives and motors, ABB now has a business that encompasses far more products than previously, bringing together drives and controls products to relieve customers from the burden of trying to work out their own matched combinations. However, it is more than just bundling products together. It is about matching technologies to meet the energy efficiency and productivity demands of a plant, or meeting the restricted space in a panel or manufacturing unit, or reducing noise or harmonics – all while providing easy procurement and support.

As such it is our desire to create a business that works together for our customers providing them with all the parts of the drive train as a package.

Spot the difference ESOS vs CRC

So just what are the differences between ESOS (Energy Savings Opportunity Scheme) and the CRC Energy Efficiency Scheme?

ESOS	CRC Energy Efficiency Scheme
Aimed at large organisations with: - More than 250 people - Annual turnover over £42.5 million	Aimed at companies using more than 6,000 MW hours of electricity and gas per year
Applies to about 9,000 UK businesses	Applies to about 7,000 UK businesses
Focuses on 90 percent of a company's total energy use including: - Electricity and natural gas - Fuel for heating and transport	Focuses on electricity and natural gas consumption: - Equating to energy bills of £500,000 or more per year
No specific carbon reduction targets imposed	Carbon emissions allowances must be purchased to cover CO_2 produced by these companies
An audit by an approved assessor MUST be done	A detailed annual report MUST be submitted
Compliance deadline: 5th December 2015	CRC Annual Report due by 31st July 2015

... and here are the similarities...

Both are mandatory government schemes enforced by the Environment Agency with civil penalties of up to £50,000 issued to companies that do not comply.

Act now and make sure you comply. Contact ABB's Energy & Productivity Team to arrange an appraisal.

Visit www.abb.co.uk/energy or call John Guthrie on 07718 638 138

Who is telling the truth?

Many companies claim they can save thousands of pounds a year on electricity bills by fitting variable-speed drives to pumps, fans and other motor-driven loads. But, are they being realistic?

The actual load on the motor is often lower because of design oversizing, throttling and head.

If the consumed power is 80 percent of full load, then here, in the table below, lies the difference between fact and fiction.

This is just one such over-zealous claim but there are others. Take a look at my blog to discover the things to look out for when reading the sales pitches.

"Be careful...check the credentials of your supplier to ensure that their engineers are true drive engineers." John Guthrie, ABB's UK energy manager.

	Fiction	Fact
Motor rating	55 kW	44 kW
Daily use	12 hours	12 hours
Weekly use	5 days	5 days
Annual use	52 weeks	52 weeks
Electrical rate (kWh)	£0.13	£0.13
Annual running cost	**£22,308**	**£17,846**

Blog: www.abbukenergy.blogspot.co.uk and Search "Three myths" or call John Guthrie on 07718 638 138

E-book helps end users keep their electric motors tip-top

The five common causes of motor failure relate to bearings, stator windings, external conditions, rotor bar and shaft couplings.

A new e-book helps electric motor users reduce motor downtime by charting these failure areas and offers tips on how to resolve them to eliminate motor outages.

Among the many and varied tips provided include how often to check and re-lubricate motor bearings, the best way to avoid misalignment and how to deal with issues like soft foot.

To get your interactive e-book send an email to energy@gb.abb.com with "e-book" in the subject line

Suite of pocket guides help make motor selection easier

ABB's suite of motors pocket guides contain everything you need to have on-hand about electric motors, including IEC and NEMA motor dimensions, hazardous area motor classifications, motor designations and world voltages.

They are suitable for all users from maintenance teams to OEMs, across all industries and in any continent.

These four fold-out guides help ensure you have all the up-to-date information needed in a format that fits into your pocket or extends into a wall poster.

Get your suite of motor guides: e-mail energy@gb.abb.com with "pocket guides" in the subject line

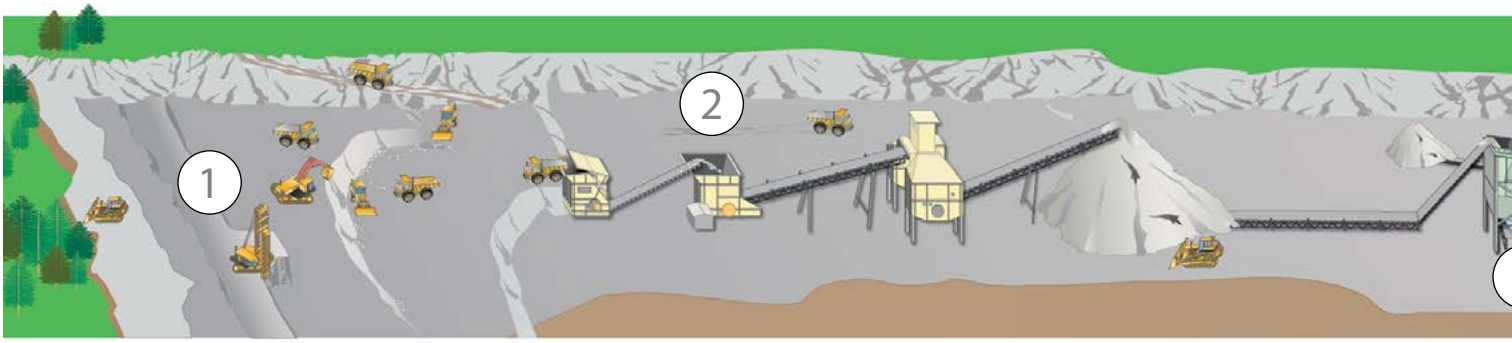
Motor Talk

Dave Hawley, UK Motors & Generators Manager, ABB Ltd.

If specified, installed and maintained correctly, there is no reason why a modern electric motor should fail. The engineering precision and technology that goes into today's motors makes them the most reliable ever.

However despite these advances, electric motors still fail and cause production outages for manufacturing companies. This is why ABB developed this e-book and suite of pocket guides to give users a very simple way of specifying the right motor every time and spotting any potential failure causes early to keep their motors in tip-top operating condition.

Drive train packages set to boost up-time and reliability



A good example of drive trains being put through their paces is in the arduous environment of a quarry. A drive train typically comprises motors, variable-speed drives, gearboxes, couplings and bearings. When fitted together they can optimise quarry machinery to deliver gains in productivity and increased plant running time by up to 50 percent.

Electric motors

The electric motor is a key component in the drive train package, with ABB's, highly energy-efficient SynRM motor offering an innovative motor design that has no rotor windings (no squirrel cage), unlike traditional asynchronous designs. The rotor, therefore, suffers virtually no power losses and its temperature remains lower than in conventional rotors. Lower temperatures mean longer bearing life and longer re-greasing intervals which extends the maintenance periods.

Variable-speed drives (VSDs)

VSDs provide accurate motor speed and torque control. Some of today's drives feature the 4th generation motor control platform, direct torque control (DTC). Drives equipped with DTC can now respond to changes in the customer speed reference much more quickly, with the motor shaft responding within 2 ms of a reference change instead of 10 ms. These VSDs are suitable for applications including cranes, winders, hoists and extruders as well as heavy conveyors.

Gearboxes

Gearboxes are designed to achieve greater output torque and power ratings with an expanded ratio range, allowing downsizing from existing units and reducing product cost. Gearboxes come with sealing options that keep dirt and debris out giving a minimum operating life of 25,000 hours in harsh high load conditions.

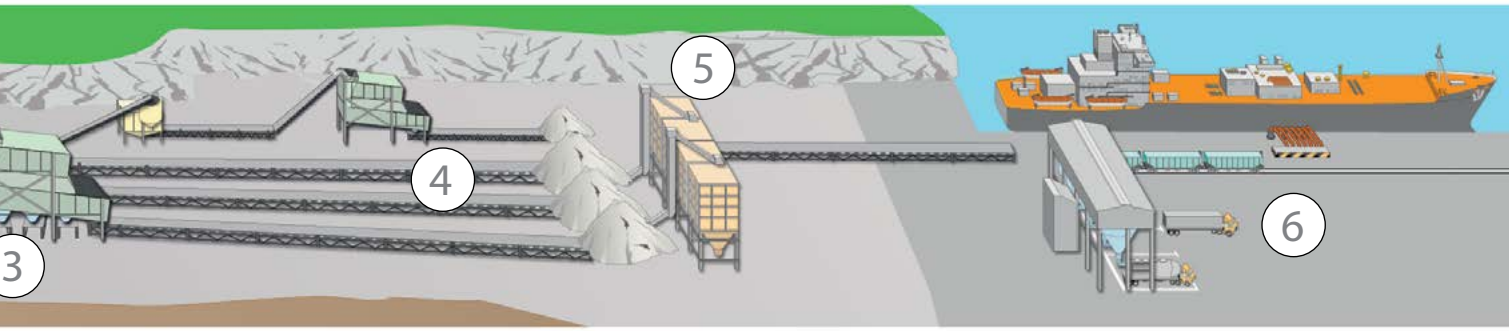
Couplings

Flexible couplings offer extra bore capacity that allows smaller coupling selections. No lubrication and no need for visual inspection helps save time. Torque is transmitted through a composite element system that is reinforced with torque carrying tension cords and split end reinforcement.

Bearings

ABB's adapter sleeve system used on its ISN spherical and Grip Tight bearings makes installation and removal quicker. The sealing system for these bearings features flingers that protect the bearing by keeping lubricants in and contaminants out.

To achieve the best in efficiency improvements it pays to look at the entire drive train. While each individual component, such as a variable-speed drive or electric motor, can play a major part in reducing energy costs, looking at how other components interact could be more profitable.



1 **Mining**

Explosion proof motors, medium voltage drives, Type E-xtra bearings, MagnaGearXTR®

2 **Crushing**

ISN bearings, Process performance motors, Dodge Grid-Lign coupling, Quantis – In-line Helical

3 **Screening**

Setscrew bearings, General performance motors, Dodge Para-Flex coupling, Quantis – Right angle helical bevel

4 **Conveying**

Grip Tight® bearings, Dodge D-Flex coupling, ABB industrial drives, Torque Arm I

5 **Blending**

Setscrew bearings, NEMA explosion proof motors, ABB industrial drives, Quantis – Motorised Shaft Mount

6 **Loading**

Grip Tight® bearings, NEMA general purpose industrial motors, ABB industrial drives, Motorised Torque Arm II

Smart vs Smarter

VSDs are packed with remarkable features that go way beyond simply controlling the speed and torque of a motor. But whether you need a smart drive or a really smarter drive, there are some features that you just can't live without.

"New keypad makes drives even easier to use"

by Andrew Preston

★★★★★

ABB's new VSD display supports graphics, charts and icons to make complex information instantly understandable. The innovative views, transitions and screen will be very familiar to users of smartphone technology. The keypad also supports text editing to allow users to re-name fault messages to match plant specific actions. Plain English is much more preferable to codes and symbols that you have to interpret or memorise. Customer specific start-up images and parameter favourites make the keypad easily tailorable to customers and OEMs alike.

Smart diagnosis

A VSD tripping is not a problem, but a symptom of the problem. It is supposed to do that to protect the motor and process machinery. But how easy is it to discover their source and decide how best to resolve them? Smart diagnosis starts with the keypad. With a clear display, it is easier to see exactly which drive has tripped. Trip histories, particularly if time stamped, allows you to spot patterns of events and perform preventive maintenance before a major issue occurs.

For more information call 07000 DRIVES (that's 07000 374837) or e-mail energy@gb.abb.com

Customers who viewed this item also viewed...

Direct torque control
DTC provides precise speed and torque control for all applications and virtually any AC motor

Fieldbus
Adapters enable connectivity with all major automation networks

Removable memory unit
Simple to install and easily replaced module stores all software and parameter configurations

Safety functions
Optional module provides extended safety functions, simplifying configuration

Start-up and maintenance tool
PC tool for drive start-up, configuration, daily use and process tuning

Authorized value provider

ABB

ABB's authorised value provider network for drives and motors offers technical expertise, product and service availability throughout the UK. It covers the entire life cycle of products by providing services such as energy & productivity appraisals, installation, start-up and preventive maintenance. Some recent examples of their successes are shown below.

For your nearest authorised value provider call 07000 ABBAVP (that's 07000 222287) or e-mail energy@gb.abb.com

ENERGY EFFICIENCY

Council takes the plunge and saves £60k a year

Liverpool City Council is saving £60,000 a year on energy costs at five of its swimming pools following the installation of ABB variable-speed drives on filtration pumps and air handling units.

The filtration pumps were originally run in a duty/standby configuration. Pumping rates were increased as more people entered the pool. The Central Group suggested using the pumps in a parallel pumping scheme that would cut energy use.

Following the installation of the drives, Central Group installed low occupancy switches, which cause the drives to run the motors at lower speeds when few people are using the pools or the pools are closed.

Textile company cuts yarn production energy costs

WSP Textiles is saving £18,000 a year on energy costs on its manufacture of cloth for billiard and snooker tables, as well as cloth for many well-known tennis ball brands such as Slazenger and Dunlop.

A critical part of the process is the spinning machines, which take wool slubbing and form it into a continuous yarn ready for processing. The problem was the speed control system. The motor runs at full power constantly with the speed controlled via a system of variable diameter pulleys. The system was inefficient and suffered failures.

APDS' solution was to use an ABB high efficiency motor with an ACS550 IP21 drive.

Water fittings manufacture saves 20 percent energy costs

Atlantic Plastics makes fittings for water utilities and the distribution market, including boundary boxes for domestic properties. All injection moulding for the company's products are done on site using 36 machines. They had identified two 400 ton injection moulding machines as energy intensive and approached ABB authorised value provider APDS for a solution.

An investigation showed that the existing direct-on-line installation used 25.3kW.

APDS installed a trial drive at the site to measure the actual demand required and matched the flow to this demand.

This drive drew 10.5 kW, giving an average hourly saving of £1.28 in electricity costs and a payback of about 12 months.

PRODUCTIVITY

Breakthrough motor cures reliability challenges

Synseal Extrusions Ltd, one of the UK's largest PVC-U extrusion companies, produces system solutions for windows, doors, conservatory roofs and orangeries.

Its Line 20 and Line 21 used servo motors that were becoming increasingly unproductive because the motors were 20 years old and largely obsolete.

Inverter Drive Systems thought the constant torque extruder application was ideal to test the capabilities of the new SynRM, a motor based on an innovative rotor design.

Two 25 kW motors, with matched ABB ACS880 drive, was installed on the extruder.

As well as curing the reliability and obsolescence problems, the SynRM motor also cut 20 percent off the running costs of the extruder, saving £754 a year on electricity.

Laundry gets back in business

Park Laundry is achieving more reliable speed control of a key machine following the installation of an ABB variable-speed drive.

The machine was originally operated using an old slip ring motor, with speed control provided by an auxiliary servo motor.

Halcyon Drives' solution incorporated an ABB general purpose variable-speed drive together with sensors on the feeder and folder that feedback to the drive to synchronise the roller speed.

As well as the improved reliability and better availability of spares, the new drive and motor combination is also more efficient. Other benefits include cooler running and lower nose level.

Water recycling centre recovery from flooding

Anglian Water's North Ferry Water Recycling Centre was flooded to a depth of over a metre, causing extensive damage to the site's electrical equipment, by the tidal storm surge that struck the east coast in December 2013.

Within two hours of receiving a call Inverter Drives Systems (IDS) were on site to assess what was needed. A temporary 90 kW hire drive was installed in order to get an outfall pump up and running to divert the incoming flows whilst the site's electrical control panels were being dried out.

The original drives had sustained serious damage and were uneconomical to repair. IDS provided two 75 kW drives from their own stock to get the outfall pumps operational, rather than waiting the usual four week delivery time.

ABB Limited
Daresbury Park
Daresbury
Warrington
Cheshire
WA4 4BT
Tel: 01925 741111