Know Your Drive System (KYDS)

Webinar series

https://mb-drive-services.com/

Presenter

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MSc. El. Engineering 2011

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12 years of experience in Medium Voltage Drives and Drive Systems (ABB Switzerland)

- System Design
- Tendering / Technical Sales Support
- Training and Consulting

Founder and CEO of MB Drive Services

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What is KYDS

Welcome to our brand-new webinar series!

KYDS is a new program where you learn more about variable speed drive systems and key system components

- Input isolation transformer
- Variable frequency drive
- Electric motor
- Cooling equipment
- Filter

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Scope

There is a dedicated lesson for each system component

- Total 5 lessons
- Each lesson takes 40 minutes
- Delivered virtually via Zoom
- Compact designed
- Right mix of theory and practice

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Audience

Who is the KYDS program designed for?

- End users utilizing VFDs and variable speed drive systems in their applications
- Organizations that sell/distribute VFDs and drive components
- System integrators
- Manufacturers of drive components
- University students
- Research institutes
- Everyone who wants to know more about variable speed drive systems

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Is it for me?

You may ask yourself the questions:

1. Is this program for me?
2. Is it worth the money?
3. Can I follow the subject?

Our response:

1. If you want to know the answers for of the questions listed on the next pages, then it is a perfect program for you.
2. This is up to you. If you value education and technical know-how then it is definitely worth the money. We don’t teach schoolbook stuff or things that you can “google” within few seconds on internet.
3. With basic knowledge you will be able to follow.

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When you want to know…

- What is the purpose of variable frequency drive?
- How to select the most suitable variable speed drive system? What is the purpose of variable frequency drive?
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- Where is the VFD technology heading?
- Which power semiconductor suits the best?
- Switching frequency: the higher the better?
- What are the benefits of a multidrive?
- Air-cooled versus liquid-cooled VFD: What shall I choose?
- Do I need regenerative VFD or not? What are the pros and cons?
- How to calculate the potential energy savings when using VFD?
- Does the investment into VFD technology pays back?

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When you want to know…

- What are the key differences between current source inverter (CSI) and voltage source inverter (VSI)?
- Can VFD ride through a grid disturbance? What is managable?
- Air gap torque ripple: Do I need to be afraid?
- How to protect a variable speed drive system?
- Please guide me: How to achieve the best availability?
- What is the role of harmonics? How to mitigate them?
- What level of harmonic distortion is acceptable?
- How do converter transformers differ from power transformers?
- How does a multi-winding transformer look like?
- What does phase shifting actually mean? What winding connections can be used?
- Help! How to understand the transformer clock number / vector group?
- Shall I go for dry type or liquid immersed type of transformer?

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When you want to know…

- How shall a VFD transformer be properly tested?
- What are the challenges of variable speed motor design?
- How do inverter duty motors differ from their direct on-line counterparts?
- What is a better choice: induction or synchronous machine?
- FWP: What is that and how to find an optimal design point?
- Can I retrofit an existing fix-speed motor with VFD? What needs to be checked?
- When to use a geared system and when to go gearless?
- What are the challenges of high-speed motor design?
- What types of excitation of synchronous machines exist?
- Are all excitation systems compatible with VFDs?

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When you want to know…

- What is the purpose of harmonic filter? What types of filters can be used?
- When is a harmonic filter required? How to design it? Where to pay attention?
- Do you recommend a passive filter or an active filter?
- What are the most common national and international standards?
- Which one is the most stringent one?
- Which concept of re-cooling of electric room is the best for my installation?
- How to select a cooling system for extreme ambient conditions?
- What kind of redundancy on the cooling system makes sense?

Then this program is for you!

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Cost

KYDS consists of 5 individual classes. You can purchase just an individual class or the entire program.

- Entire program (set of 5 classes): CHF 80.-
- One specific class only: CHF 20.-

* Our premium subscribers receive 50% discount on above prices

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Payment

You have two options:

- Bank transfer
- PayPal transfer

Credit card payment is currently not possible.

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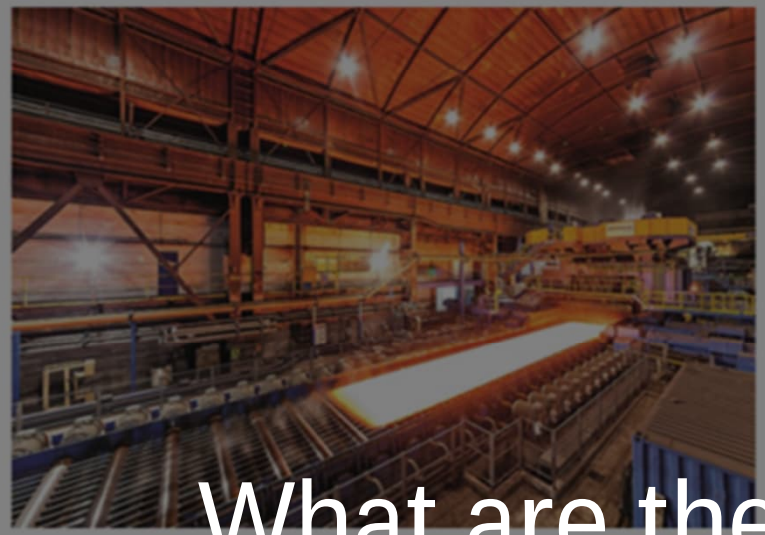
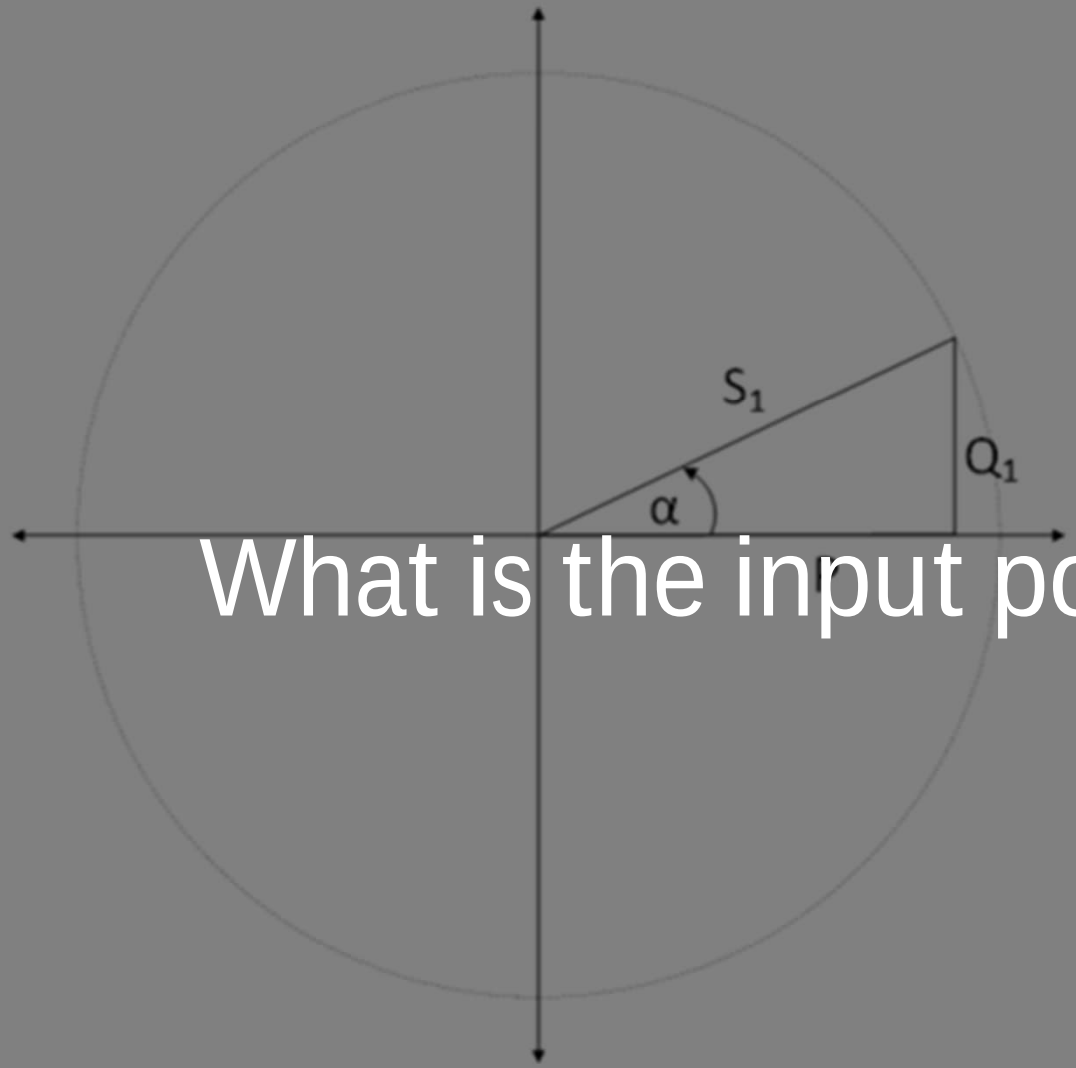
How to choose the right MV VFD?



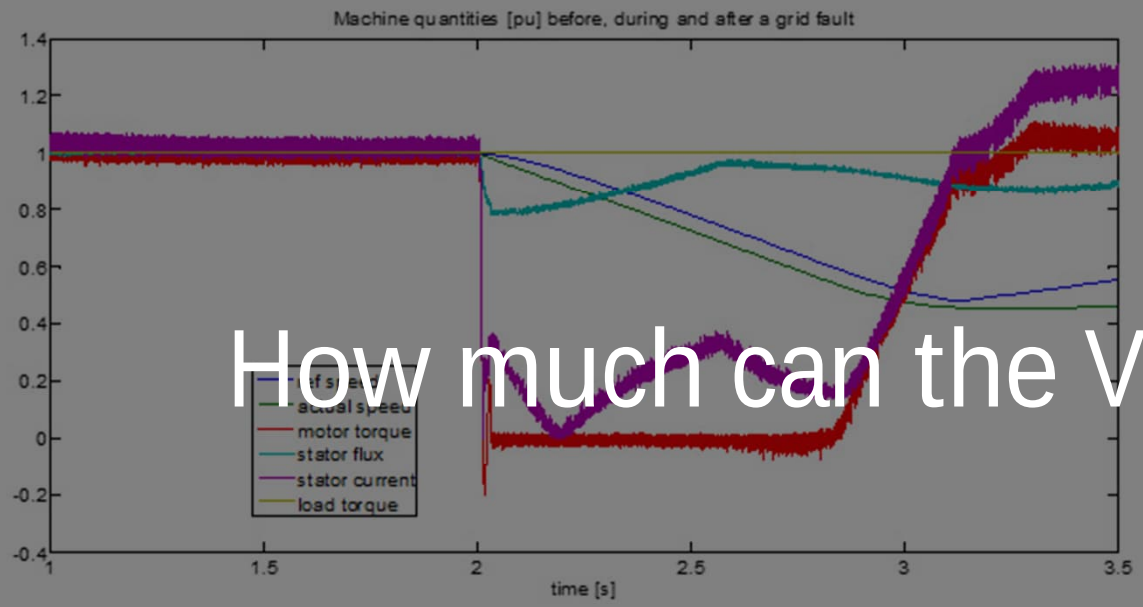
What are the application requirements?





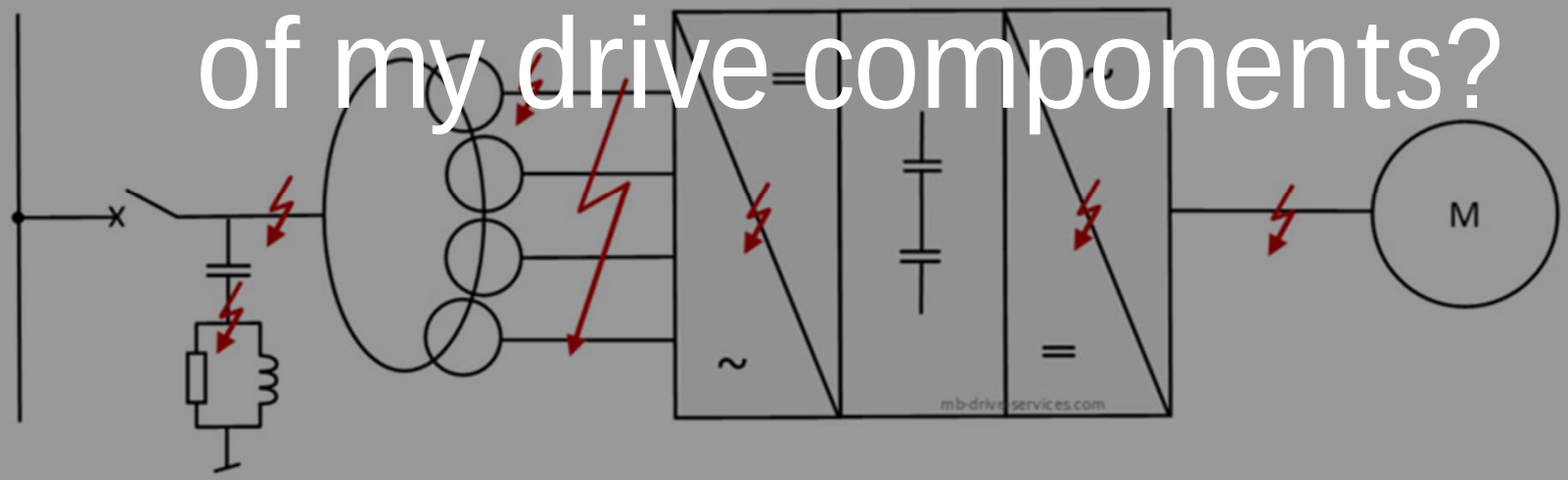
What is the input power factor of a VFD?

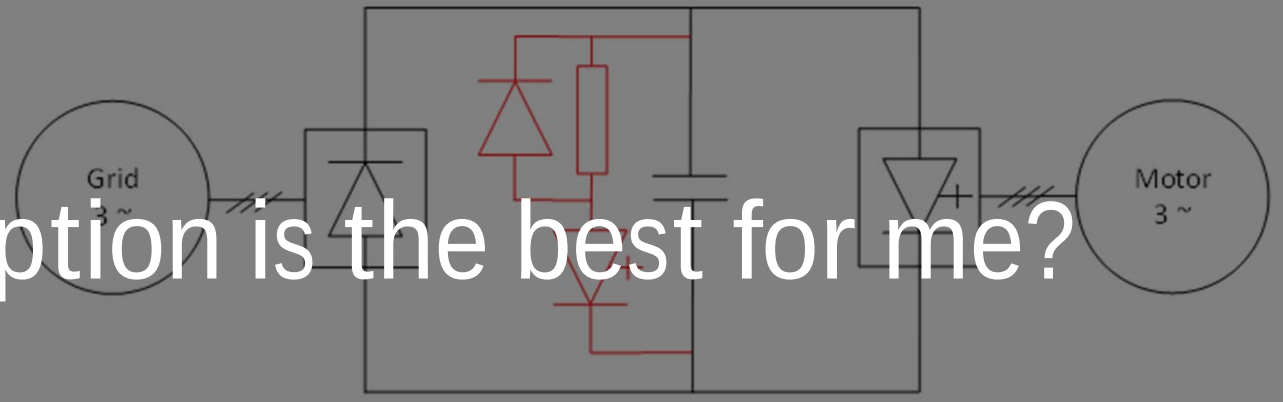
How do voltage source inverter and current source inverter compare?



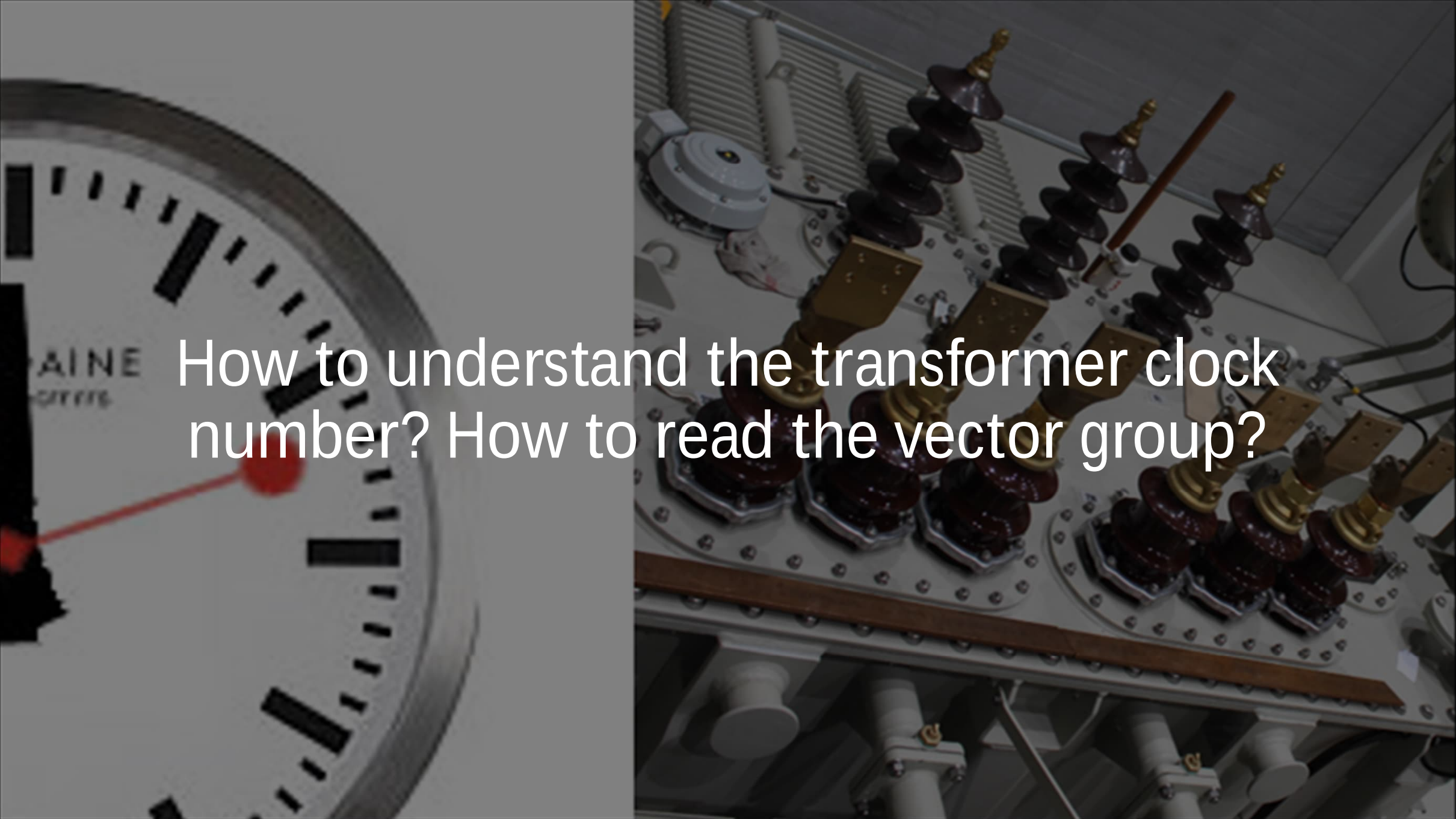
How much can the VFD ride through?

What is the short circuit current rating of my drive components?



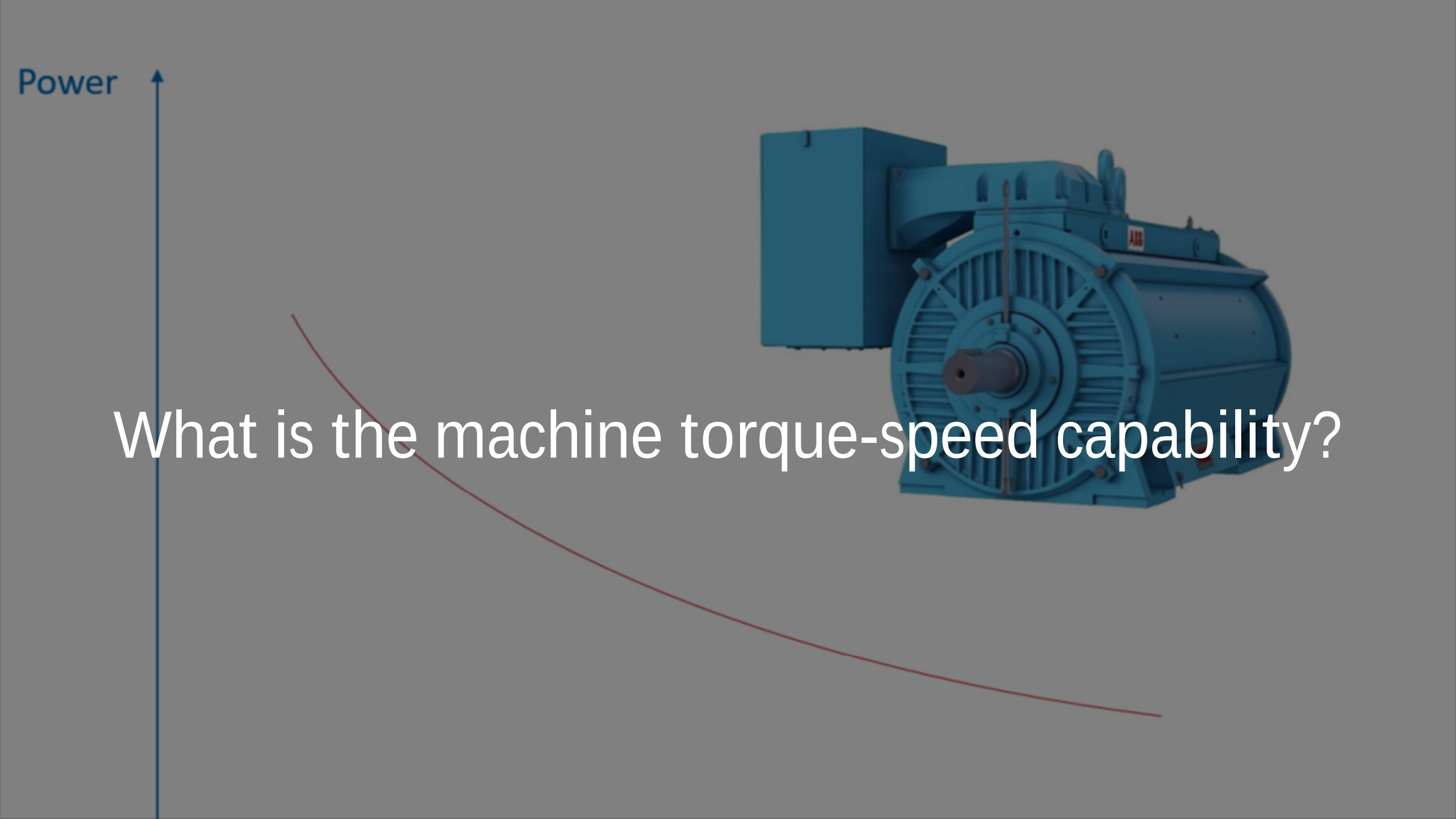


What braking option is the best for me?

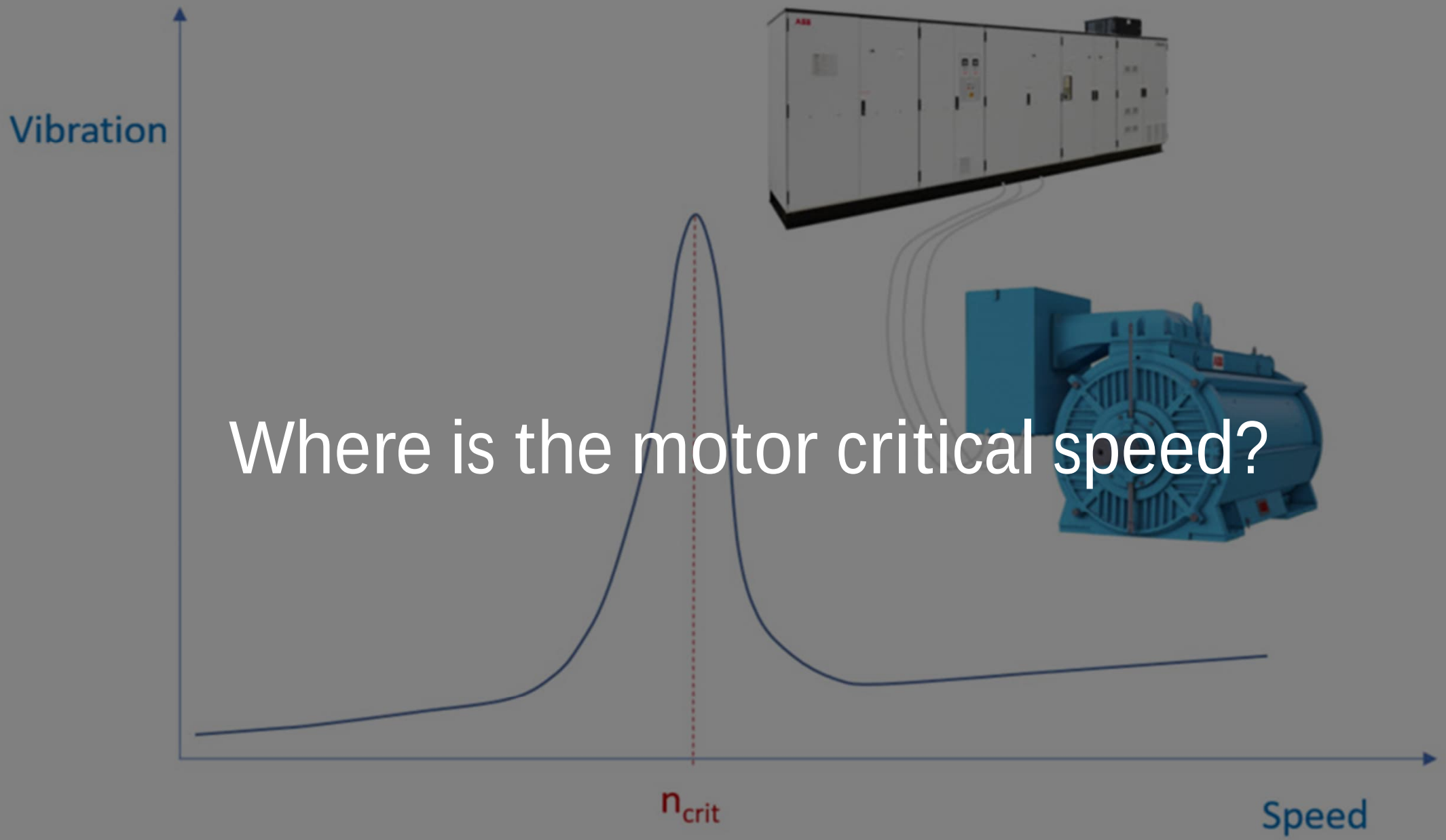


How to understand the transformer clock number? How to read the vector group?

What noise level shall I expect?



What is the machine torque-speed capability?


Vibration
Where is the motor critical speed?
n_{crit}
Speed