

Product Information Sheet

DRIVE 24™ SERIES (DRIVE 12/24, 18 & 24)

- Multiple output Drive Transformers
- Available in autotransformer or isolation transformer configuration
- Produce 12, 18 or 24 pulse schemes by canceling the characteristic harmonics of 6 pulse drives or 12 pulse-ready drives

General

The MIRUS DRIVE 24™ series transformers are designed to reduce the harmful harmonic currents produced by 6-pulse rectifier circuits, such as those used in adjustable speed (ASD) or variable frequency (VFD) drives and 3-phase computer or other electronic equipment.

6 pulse rectifier circuits generate significant amounts of low frequency harmonic currents. If not suitably treated, these harmonics can have many undesirable effects. These include:

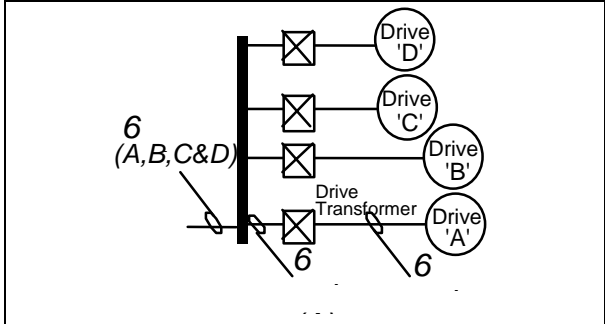
- Overheating of transformers, cables and other electrical distribution equipment
- Poor power factor and premature failure of power factor correction capacitors
- High voltage distortion which can cause operational problems and/or component failure in the ASD's themselves or other equipment connected to the same distribution

How they work

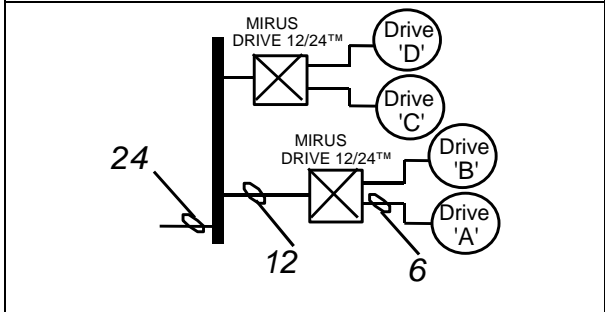
The DRIVE 24™ series utilizes phase shifting technology between multiple outputs to cancel 3-ph rectifier harmonics. When supplying two 6 pulse loads, the dual output DRIVE 12/24™ applies a 30° phase shift between the two loads to

achieve a 12 pulse scheme through cancellation of 5th, 7th, 17th & 19th harmonics on its load side. When a 3rd and 4th drive is being serviced, a second DRIVE 12/24™, connected in an alternate configuration, will provide the appropriate phase shift to create a 24 pulse scheme by canceling 11th & 13th harmonics upstream. As shown in the table, a 24 pulse scheme will typically result in current distortion less than 10%.

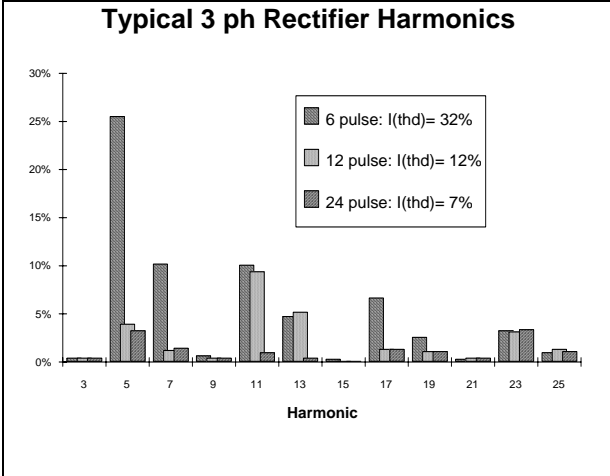
Variable Frequency Drive Application



System with Drive Isolation transformers
(Harmonic currents produced by drives ADD)



System with MIRUS DRIVE 12/24™
(Harmonics produced by drives SUBTRACT)



For applications involving 3 ASD's, an 18 pulse scheme can be created by using the 3 output DRIVE 18™. When 4 ASD's can be serviced from a single device, the DRIVE 24™ can be used to produce a 24 pulse scheme.

Product Information Sheet: DRIVE 24™ SERIES

Product Application

Through its **versatility**, the DRIVE 12/24™ provides 24 pulse performance at the cost of a 12 pulse system. The same model type can be used on many different combinations of multiple drives as long as the appropriate kVA rating is chosen. For example, a 75 kVA DRIVE 12/24™ can be used for any of the following applications:

- Two 30 hp drives
- A 30 hp matched with a 20 & a 10 hp drive
- The 3rd & 4th drives on a multiple drive system to create a 24 pulse scheme
- A mainframe computer system with two 37.5 kVA sides

This versatility makes the DRIVE 12/24™ ideally suited for Motor Control Center applications where multiple ASD's are in use. It is not necessary to establish perfect balance between the various loads in order to achieve impressive results. By inducing a cancellation action, instead of the normal additive effect, the DRIVE 12/24™ will prevent harmonic currents from ever reaching their harmful levels.

When the application calls for voltage step-down and/or isolation, the DRIVE 12/24™ isolation transformer should be specified. However, when appropriate, the autotransformer version can

accomplish the same impressive harmonic improvements in a much smaller package and at a lower cost.

Typical Performance

# of Drives	Device	Harmonics Treated	Harmonic Reduction
2	D12/24	5, 7, 17, 19	60 - 70%
3	D18	5, 7, 11, 13	65 - 75%
4	D24 or 2xD12/24	5, 7, 11, 13, 17, 19	70 - 80%

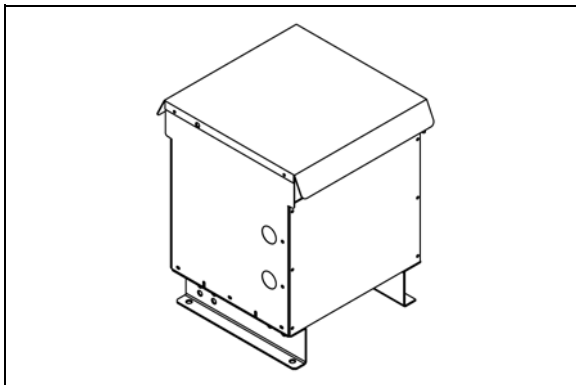
Reliability

All DRIVE 24™ Series products are **passive** devices. They utilize no capacitors and therefore do not present any of the risks that installing capacitors or tuned filters can have in low-voltage systems, such as resonance and/or overloading of the capacitor/filter due to changing loads. Reliability meets or exceeds top-of-the-line transformers.

Sizing & Installation

The DRIVE 24™ Series products are sized to the kVA requirements of the drives. Installation is as per standard electrical code practices relating to transformers. They are available in either auto-transformer or isolation transformer configurations.

Drive 24™ - In NEMA 1 Enclosure



Units are available in standard kVA and voltage ranges for 3-phase, 3-wire, 50 or 60Hz application (Custom configurations are also available.)

Unit Selection Part #
D12/24A-xxx-yyy-kVA

Where: xxx primary voltage
yyy secondary voltage
kVA input kVA
A autotransformer configuration
(T for isolation transformer)

Specifications are subject to change due to ongoing product development.

Related Products:

DRIVE TAMER™
NEUTRAL CURRENT ELIMINATOR™ (NCE™)
COMBINED NEUTRAL CURRENT ELIMINATOR™ (CNCE™)
HARMONY™ Series Transformers
5-7 ELIMINATOR™, 11-13 ELIMINATOR™

DISTRIBUTED BY:

MIRUS PRODUCTS ARE CSA APPROVED & UL LISTED

MIRUS International Inc.