

# CLEAN POWER DRIVES

## H2 IEEE 519 SERIES

*Benshaw H2 519 and 519P (passive filter) Series Clean Power Drives are designed and manufactured to limit voltage and current distortion levels to within the levels defined by IEEE-Std 519™. This eliminates the need for expensive, time consuming harmonic analysis. Our municipal projects and engineering team will work with you to configure a clean power solution that meets your specifications and requirements.*

### KEY FEATURES

- H2 Series drive
- NEMA 1 ventilated enclosure
- 65 kAIC circuit breaker with lockable disconnect
- 519 (18 Pulse) includes phase-shifting transformer, a line reactor and a 12-pulse rectifier chassis unit
- 519P includes a passive harmonic filter design
- Control transformer with extra 120V capacity
- Door-mounted control
  - Keypad/LCD display
  - Start/stop buttons
  - Reset button
  - Hand-Off-Auto switch
  - Speed potentiometer
  - Run light
  - Fault light
  - Power On light
  - VFD-Off-Bypass switch (with bypass option)

### OPTIONS

- Line Surge Protection
- Input (line) Fusing
- Bypass (Three Contactor or Soft Starter)
- Output Reactor or Long Lead Filter (dV/dT)
- Enclosures: NEMA 12, 3R



H2 519P with Passive Filter



**STANDARD DUTY:** 100HP to 800HP @ 460 Vac

**HEAVY DUTY:** 75HP to 600HP @ 460 Vac

### MODULAR DESIGN

The modular design of Benshaw H2 519/519P Series Clean Power Drives eliminates significant maintenance problems that were inherent in older drive designs. Drive reliability is enhanced by significantly reducing power module part counts. This design approach also allows each H2 Series drive unit to be custom-tailored to your specific requirements. An optional bypass design configuration (ATL or RVSS) is available for H2 519/519P drive packages when mission critical reliability is important and disruptive downtime cannot be tolerated.

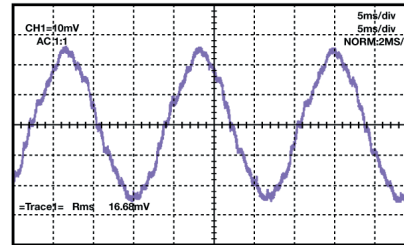
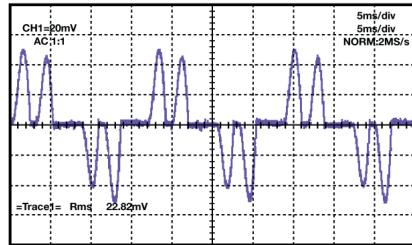
**Rapid | Rugged | Global**

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## 18 Pulse, IEEE-519/519P\* Design

The 519 Series drive packages combine Benschaw's H2 Series drive with an 18 Pulse Input. The input consists of a high impedance line reactor, a special designed auto-transformer with 9 phase shifted secondary taps and a 12 pulse rectifier unit. All components are housed in a NEMA 1 enclosure (other ratings available) along with a 65 kAIC rated Circuit Breaker and door mounted control. \*519P Model utilizes a passive filter in place of an 18-pulse transformer.

### 6 PULSE WAVEFORM COMPARED TO 18 PULSE WAVEFORM



=Filter= Smoothing : OFF  
BW : FULL  
=Offset= CH1 : 0.0000V  
CH2 : 0V  
CH3 : 0V  
CH4 : 0V  
=Record Length= Main : 100K  
Zoom : 2K  
=Trigger= Mode : AUTO  
Type : EDGE CH1 F  
Delay : 0.0ns  
Hold Off : MINIMUM

=Filter= Smoothing : OFF  
BW : FULL  
=Offset= CH1 : 0.0000V  
CH2 : 0V  
CH3 : 0V  
CH4 : 0V  
=Record Length= Main : 100K  
Zoom : 2K  
=Trigger= Mode : AUTO  
Type : EDGE CH1 F  
Delay : 0.0ns  
Hold Off : MINIMUM



## PROGRAMMING

Key	Description
LCD Display	<ul style="list-style-type: none"> <li>Displays Operating Modes and Parameter Groups</li> <li>Command Source</li> <li>Operating Status and four (4) monitor items</li> </ul>
ESC	<ul style="list-style-type: none"> <li>While in the Edit state, reverts back to previously saved value</li> <li>When pressed while switching codes within the group, it is switched to the first parameter of the group</li> </ul>
PROG/ENT	<ul style="list-style-type: none"> <li>When pressed once, enter the Program mode (Parameter Edit mode).</li> <li>When pressed again, after changes, changed data is saved.</li> </ul>
Left/Right	<ul style="list-style-type: none"> <li>Move between PAR groups and move the cursor when in PROG Mode</li> </ul>
Up/Down	<ul style="list-style-type: none"> <li>Move between parameters and increase/decrease values in PROG Mode</li> </ul>
HAND	<ul style="list-style-type: none"> <li>It is used to select Keypad (HAND) operation</li> </ul>
OFF	<ul style="list-style-type: none"> <li>Off and Fault Reset</li> </ul>
MULTI	<ul style="list-style-type: none"> <li>Multifunction. Can be used to assign User Group parameters</li> </ul>
AUTO	<ul style="list-style-type: none"> <li>Used to select AUTO operation</li> </ul>
MODE	<ul style="list-style-type: none"> <li>Monitor Mode -&gt; Parameter Mode -&gt; Configure Mode</li> </ul>

### STANDARD FEATURES

- UL listed
- Limits voltage and current harmonics to IEEE-519 levels
- Eliminates expensive harmonic analysis
- Addresses poor power factor
- Prevents overloading of circuit breakers, feeders and transformers
- Run from motor/generator systems

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