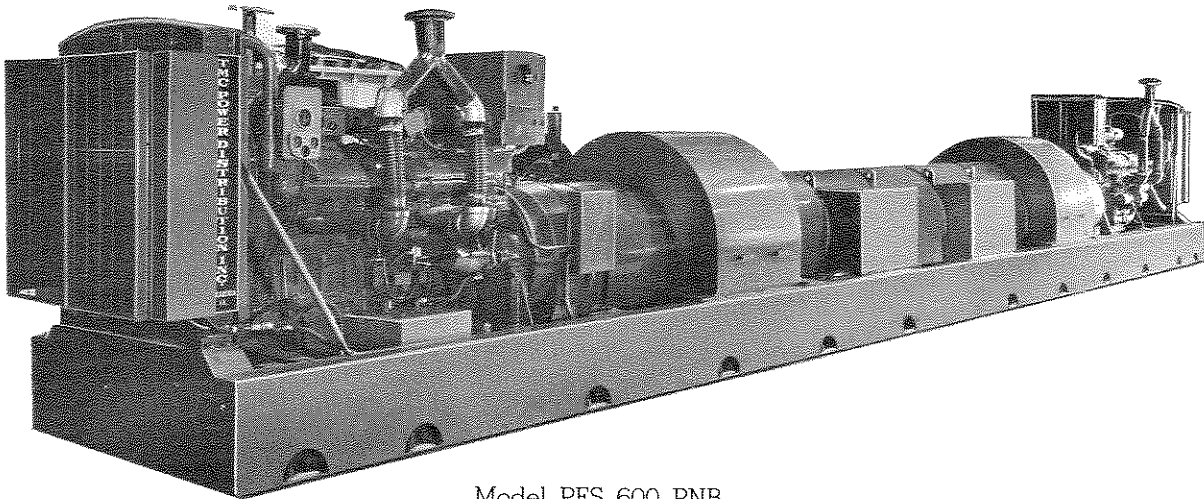


TECHNICAL BULLETIN NUMBER 506

"Precise No Break" Power Systems
TMC Model PFS 600 PNB



Model PFS 600 PNB

Illustrated above is the largest "Precise No Break" power system ever placed into operation. This unit, known as Model PFS 600 PNB, will provide 750 KVA of precisely regulated power without interruption even under conditions of complete primary power failure.

This type of uninterrupted power is necessary in many commercial and government installations. It is vital to systems such as computers or crypto transmissions where even a momentary break would mean real trouble.

A glance at the specifications will confirm that "Precise No Break" means just that — continuous precise power with no break in voltage or frequency. In the system illustrated, even greater flexibility is possible, since either engine can drive the unit at reduced power, and if necessary, the generator set can be completely by-passed. Since the driving engines are diesel, freedom from fuel worry is assured, and the starting function for the engines is hydrostart for un-failing response under any condition.

The control unit which is all solid state permits manual or automatic operation and contains all monitoring and sensing devices, and all circuit breaking and metering controls are provided. This unit in actual installations has met or exceeded all specifications. Incidentally, the system is available for 50 cycles under the model number, PFS 600 PNB 50.

"Precise No Break" Power Systems

"Precise No Break" SPECIFICATIONS, MODEL PFS 600 PNB

ELECTRICAL SPECIFICATIONS

RATED POWER:	750 KVA, 0.8 PF with 10% overload for 1 hour.
OUTPUT:	120/208, 240/416 or 277/480 volt, 60 cycle three phase.
VOLTAGE REGULATION:	Within 1% from 0 load to 100% load.
*VOLTAGE TRANSIENTS:	Under no load to full load and full load to no load conditions. (transients will be reduced proportionately under lesser load changes.)
No Load To Full Load	Less than 7.5% dip
Full Load To No Load	Less than 9% rise
FREQUENCY REGULATION:	1/6 of 1%.
*FREQUENCY TRANSIENTS:	Less than 1% droop after failure of primary power.
INPUT:	480 volt, 60 cycle, three phase.

COMPONENTS

ENGINES:	Two GM Detroit Diesel 7163-7000 (16V71N)
STARTING SYSTEM:	
PRIMARY:	Automatic Hydrostarter with 5 accumulators for each engine.
SECONDARY:	Engagement to the inertia flywheel.
GOVERNORS:	Woodward special design twin engine control, electric load and frequency sensing with independent centrifugal back up.
CLUTCHES:	Two eddy-current induction clutches, special design.
INERTIA FLYWHEELS:	Two single forged steel, SAE 4340, vacuum poured flywheels, each 56" × 36".
FLYWHEEL BEARINGS:	Spherical roller bearings sized for 300,000 hours' operation.
COUPLINGS:	Internal gear flexible couplings.

*Transients are defined to mean momentary changes under changing load conditions, and have no real effect on power supply.

Model PFS 600 PNB

MOTOR:	TMC Power 900 HP brushless, synchronous motor of special design for no back-loading into a direct short, manufactured by Delco Products.
ALTERNATOR:	Brushless synchronous alternator with rotating field, manufactured by Delco Products.
BASE:	Fabricated steel with machined mounting surfaces.

CONTROLS

CABINETS:	Three NEMA free standing cabinets, dead front.
BREAKERS:	Three motor-operated air breakers for primary to load (generator set bypass), alternator to load and primary to motor.
METERS:	1% accuracy, 4½", 270° meters for voltage, current, power, frequency and elapsed time; also synchroscope.
VOLTAGE REGULATOR:	Instant response solid state three transistor model.

Standard equipment includes solid state sensing and monitoring devices, automatic synchronizers, heavy duty sealed relays, current and potential transformers, terminal blocks and fuse blocks.

OTHER TECHNICAL DATA

INSTALLATION DATA:

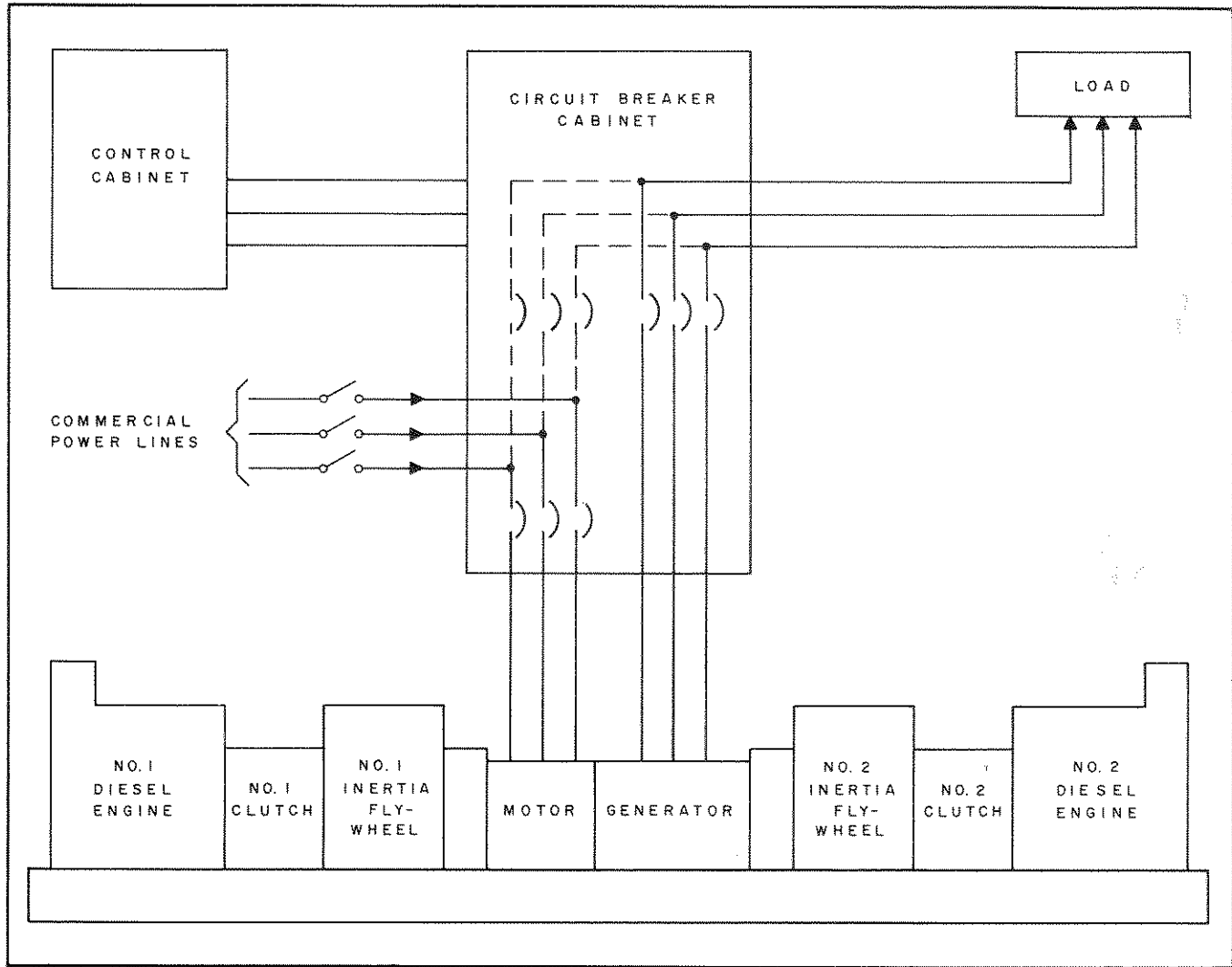
Generator Length	44' 2"
Generator Width	5' 8"
Generator Height	6'11"
Cabinets	30" × 30" × 70"
Weight	Approx. 100,000 lbs.

ENVIRONMENTAL CONDITIONS: Unit is designed to operate in any ambient temperature from -40° to + 50° C and normal environmental humidity conditions.

OPTIONAL EQUIPMENT

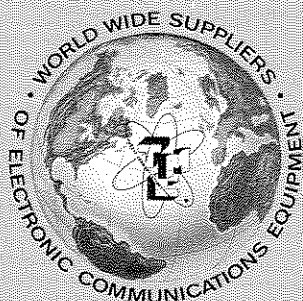
The following options are available at extra cost and may be added to the system:

1. Remote monitoring
2. Remote monitoring and remote operation
3. Alarm system
4. Tie-in control of existing standby generators for non-critical service
5. Integrated fuel systems
6. Pre-fabricated environmental shelters



FUNCTIONAL BLOCK DIAGRAM "PRECISE NO-BREAK" POWER SYSTEM

COPYRIGHT 1964
THE TECHNICAL MATERIEL CORP.



T.M.C. POWER DISTRIBUTION INC.

A SUBSIDIARY OF THE TECHNICAL MATERIEL CORPORATION

4412-4414 WHEELER AVE.

ALEXANDRIA, VIRGINIA