Golds' Relays

for Polyphase Motor Protection

DATA SHEET DR/16

M2A
Mn2A
MW2A

VX & HX TYPES

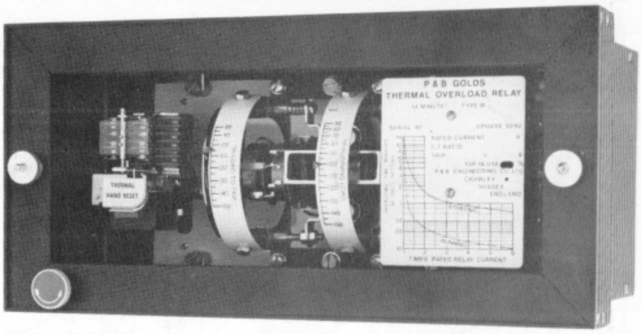
APPLICATION

Type 'M', 'Mn' or 'MW' Thermal Movements with additional tripping auxiliary relays are housed in the 'X' range of relay cases which are fabricated from aluminium extrusions.

These relays are designated type 'M2AVX', type Mn2AVX' and type 'MW2AVX' when mounted vertically and type 'M2AHX', type 'Mn2AHX' and type 'MW2AHX' when mounted horizontally (V = Vertical, H = Horizontal).

These relays are similar to relay types M2A, Mn2A and MW2A described in Data Sheets DR/1 and DR/2 and are designed to protect polyphase motors against damage when subjected to overload, single phasing or phase unbalance conditions. The normally open contact system of the thermal movement close under fault conditions to operate the tripping auxiliary relay. The tripping auxiliary relay is fitted with a hand reset flag indicator.

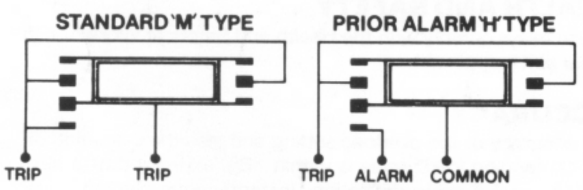
Prior overload alarm ('H' type) can be provided as an additional feature.



TYPE M2A HX

THERMAL CONTACTS

A unique contact assembly ensures that under all unhealthy conditions, contact closure is achieved to remove the motor from its supply. A running load indicator is incorporated as a standard feature.



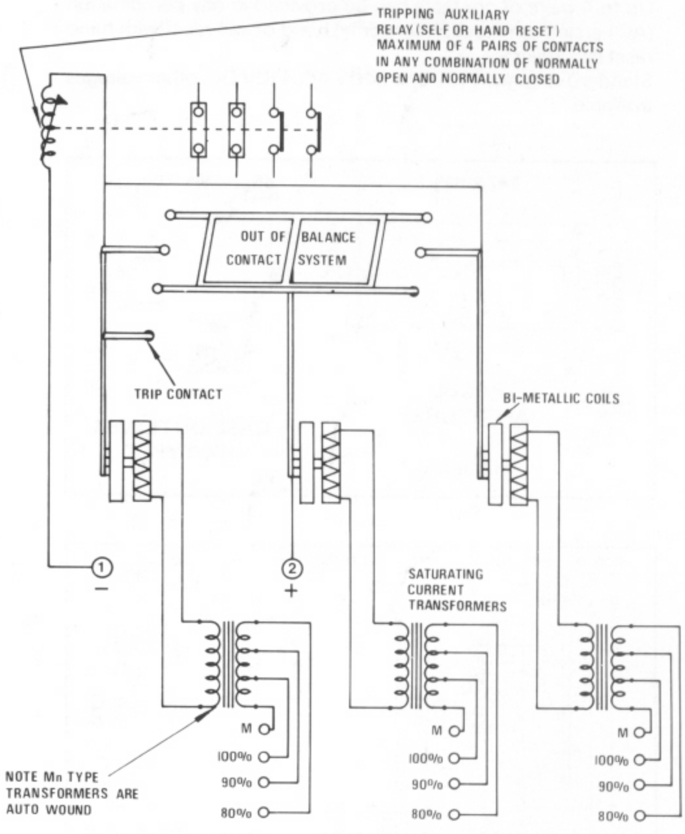
Thermal Contact Arrangements

OPERATION ON SINGLE PHASING

The time of operation depends basically upon the load at which the motor is operating, but this is always short enough to provide an ample factor of safety, in all but the most onerous of applications. Closure will occur when the current between the outer phases and the centre phase exceeds 12% approximately at full load on standard relays.

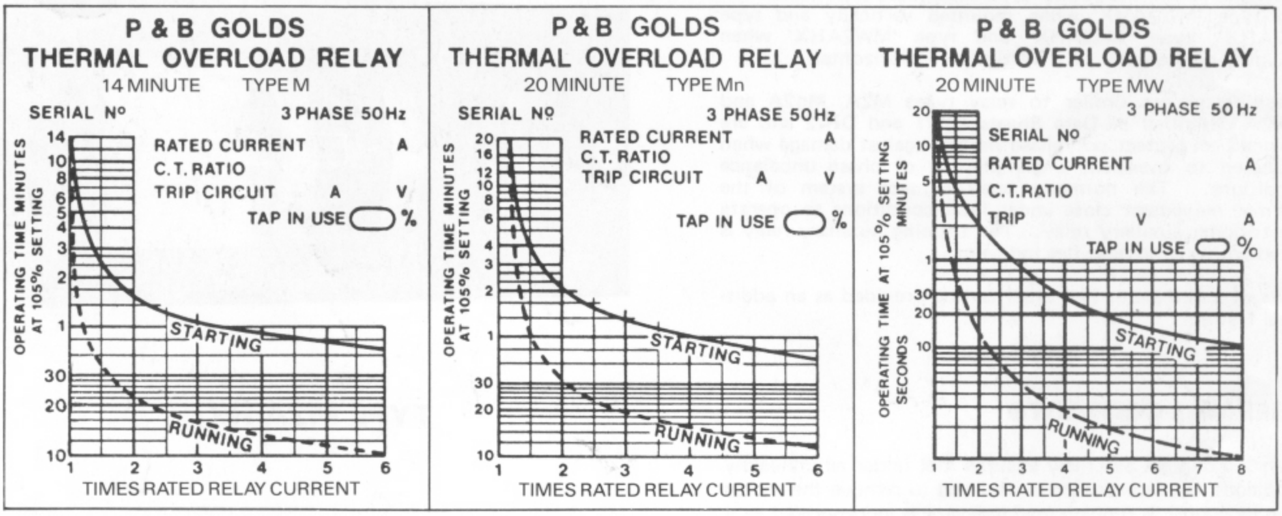
SATURATING CURRENT TRANSFORMERS

The heaters or bi-metallic coils of these relays are fed from, and protected by, the secondaries of saturating core current transformers, either separately mounted or as an integral part of the instrument. They prevent relay operation during extended start conditions against high inertia loads, and protect the heaters or bi-metallic coils from damage due to high start currents and short circuits. When fed via main current transformers, items marked * in the standard rating column of the table (see over) are provided with tappings of 80, 90 and 100% of rating. Other non-standard taps are available on 'M' types only. The overcurrent rating for standard transformers is 40 times nominal rating for 0.5 secs. repeated 3 times at intervals of 3 minutes.



SCHEMATIC DIAGRAM

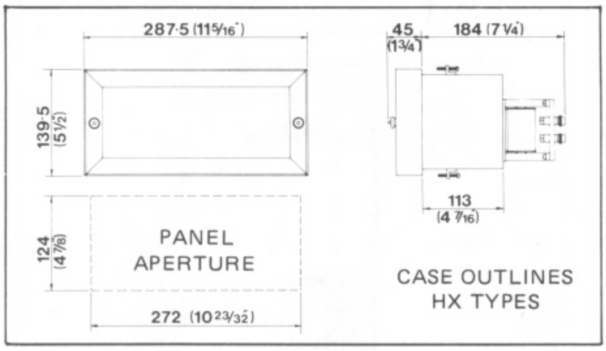
Type	Consumption per Phase @ 100% Load	Standard Ratings		Time Lag Mins.	Thermal Element Scales	
		Direct Connection (up to 660V)	C.T. Operated		% Running Load	% Load to Trip
M2AVX M2AHX	6.5vA	0.5-60 Amps. in 58 Steps	0.5*, 1.0*, 2.0*, 2.5*, 3.0*, 3.5, 5.0* Amps.	14	40-125%	80-125%
Mn2AVX Mn2AHX	2.0vA	Not Available	1.0*, 2.0, 2.5, 3.0, 3.5, 5.0* Amps.	20 or 30	60-150%	80-150%
MW2AVX MW2AHX	2.0vA	,,	1.0* or 5.0* Amps.	20	40-125%	80-125%



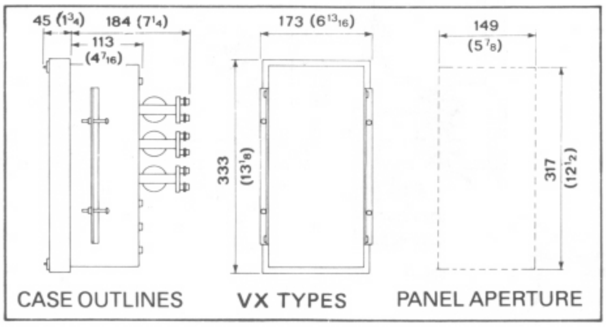
TYPICAL NAMEPLATE OPERATING CURVES OF TYPE M, Mn, & MW RELAYS

TRIPPING AUXILIARY RELAY

A DC main auxiliary relay operates over a range between 75% and 120% of nominal voltage and the corresponding range for an AC unit is 80% to 115% of nominal voltage.
Up to 4 pairs of contacts can be provided in any combination (AC version self reset 3 pairs only) hand or self reset with hand reset flag indicator.
Standard voltages 110V and 240V AC, 110V DC, other voltages available.



CASE OUTLINES HX TYPES



CASE OUTLINES VX TYPES PANEL APERTURE

BRITISH STANDARDS

These relays comply with BS142/1966 in so far as this specification applies.

HEALTH AND SAFETY

These relays comply with the Health and Safety at Work Act, in so far as it is applicable.

ACCURACY

The accuracy of the overload setting and also the indication of the "% running load" scale is within ±3% expressed as a percentage of full scale deflection. Instantaneous elements are accurate to within ±10%

AMBIENT TEMPERATURE COMPENSATION

The compensation is complete and stable over a temperature range of -10°C to +60°C. Other ranges can be accommodated to cater for special conditions.

SPECIAL FINISHES

Special finishes are available to meet tropical conditions with proofing varnish to act as a fungicide and insect repellent where necessary.

INSULATION

All relays will withstand 2.5kV r.m.s. for 1 second between all live parts and earth, and between all circuits not intended to be connected together.

ORDERING PARTICULARS

TYPE SYMBOL
RELAY RATING
MOTOR FULL LOAD CURRENT
C.T. RATIO
MOTOR STARTING CURRENT AND RUN-UP TIME
TRIP CIRCUIT VOLTAGE
AUXILIARY CONTACT ARRANGEMENT

P & B ENGINEERING COMPANY LTD.
6/14 CROMPTON WAY, CRAWLEY,
WEST SUSSEX, RH10 2QR.
Tel: Crawley (0293) 24204/5/6
Telex: 87111

NOTE: Our policy is one of continuous product development and we therefore reserve the right to supply equipment which may differ slightly from that described.