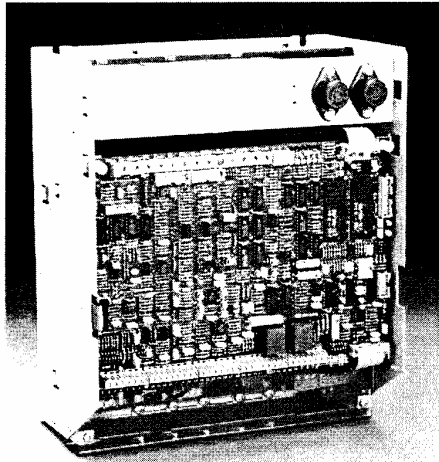


# TPy3A

## NON-REGENERATIVE DC DRIVES



### TPy3A Non-Regenerative DC Drives

The Amicon TYPACT Series TPy3A allows the speed of a DC motor to be varied by armature voltage control. The TPy3A is a non-regenerative, full-wave control designed to regulate the speed or torque of non-overhauling loads, single or dual direction by contactor reversing. Fully isolated control circuitry, picket fence SCR firing and conservative ratings assure excellent performance and reliability. Program switches, L.E.D. indicators and aux. input capabilities offer flexibility and simplify installation, for both single drive and system applications.

### STANDARD FEATURES:

- Inputs - all inputs are low level. No buffers or isolated cards required.
- Speed or torque control inputs.
- Full wave bridge.
- Modular Construction - ribbon cable interface.
- Tachometer feedback.
- Field loss and field economy.
- 150% overcurrent capability for 60 seconds.
- Integral field supply.
- 1600 PIV rated SCR's with transient protection.

## 1 - 1500HP

- THREE PHASE 50/60 Hz AC INPUT
- FULL WAVE OUTPUT
- FULLY ISOLATED
- TACH OR VOLTAGE FEEDBACK
- L.E.D. INDICATORS

# TYPACT

### ADJUSTMENTS:

- Maximum and minimum speed.
- Speed Loop -  
integral and proportional compensation.
- Current Loop -  
integral, proportional and adaptive compensation.
- Current Limit.
- Acceleration and deceleration rate.
- IR compensation.
- Current and Speed monitor output scaling.
- Zero Speed sensitivity.

### SWITCH SELECTABLE FUNCTIONS:

AC Input Voltage:  
220/240, 380, 415, 440/460, 480/500VAC  
50 or 60 Hz.  
DC Tach input level (5 to 300VDC).  
Internal/External current limit set point.  
Internal/External accel/decel control.

### CONTACT OUTPUTS:

Drive fault.  
Zero speed.

### OPTIONAL FEATURES:

The TPy3A series of drives can be supplied in chassis form, single drive preassembled panel or in multi-drive systems. Refer to the front of the DC Controls Section for a complete description of various panel options. Contact your AMICON local representative or distributor for multi-drive system quotations. Special field voltages are available in modular field package, as well as field current regulators.

Standard "y" Control Interface Options mount behind the front board of the TPy3A series drives. Options for follower drives, dancer control, speed trip, winders, etc. are listed in the Standard "y" Control Interface Options Section of the catalog.

Refer to the Standard "y" Control Interface Options Section for other available options. Predesigned PD panels are available.

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TPy3A NON-REGENERATIVE DC DRIVES			
Model Number	Input Code	3 Phase AC Input	HP Range
TPy3A-16-	2A	230	1-5
	2B	460	1-10
TPy3A-32-	2A	230	7.5-10
	2B	460	15-20
TPy3A-56-	2A	230	15
	2B	460	25-30
TPy3A-88-	2A	230	20-25
	2B	460	40-50
TPy3A-112-	2A	230	30
	2B	460	60
TPy3A-148-	2A	230	40
	2B	460	75
TPy3A-224-	2A	230	50-60
	2B	460	100-125
TPy3A-280-	2A	230	75
	2B	460	150
TPy3A-336	2B	460	200
TPy3A-400-	2B	460	250
TPy3A-480-	2B	460	300
TPy3A-660-	2B	460	400
TPy3A-880-	2B	460	500
TPy3A-1180-	2B	460	600-700
TPy3A-1425-	2B	460	800-900
TPy3A-1900	2B	460	1000-1250
TPy3A-2400	2B	460	1500

**NOTES:**

Refer to the front of the DC Drives Controls Section for a complete explanation of the functional and panel options.

Refer to the Custom System Options Section for speed meters, potentiometers, operator stations, pilot lights, etc.

Refer to the Standard "y" Control Interface Option Section for interface option cards, i.e.: preset speeds, dancer, follower, relay cards, etc.

PC BOARDS	
Part No.	Description
Ry32	Regulator Board
Sy3	Supply Board
Py32 ★	Power Board
FEy ★	Field Supply Board
PTy32	Pulse Transformer Board

\*Supply drive model # when ordering

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FUNCTIONAL OPTIONS	
Option Code	Description (Choose only one functional option)
- C	Chassis Only
- F	- C with AC input fuses and mounting block
- PD	Pre-designed PD Panel
- FC	Field Current Regulator

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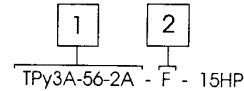
PANEL OPTIONS	
Option Code	Pre-designed "PD" Panel Options
- DB	Dynamic Braking
- CB	Circuit Breaker
- N1	NEMA 1 Enclosure
- N4	NEMA 4 Enclosure (custom) *
- N12	NEMA 12 Enclosure (custom) *

\* Contact Factory for NEMA 4 or 12 Custom Enclosures.

**ORDERING INSTRUCTIONS**

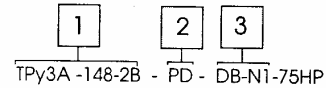
**Example #1**

The model number for a 15HP non-regenerative control chassis with fuse protection, 230VAC input is:



**Example #2**

The model number for a 75HP non-regenerative control with fuse protection, PD panel, dynamic braking and NEMA 1 enclosure, 460VAC input is:



**SPARES**

MISC. PARTS	
Part No.	Description
PP1040	Field Bridge (240 VDC)
PP1013/12	Field Bridge (150 or 300 VDC)

**CONTROL FUSES**

Part No.	Circuit	Designation
Omega 1.6A, 250V	±15, +24VDC, Sy3	F1, F2
Omega 250mA, 500V	Sync. Supply, Sy3	F7, F8, F9
Omega 4A, 500V	Snubber Circuit, Py32	F11, F12, F13
Bussman KTK4	Field 4 Amps	F14, F15
Bussman KTK8	Field 8 Amps	F14, F15



### STANDARD "y" CONTROL INTERFACE OPTIONS

Option Code	Description	Option Code	Description	Option Code	Description
Ay	Auxiliary Amplifier	*BDAY	Binary to Analog Converter or Multiplying Converter	MTy	Tach Loss Indicator
Ay (P)	Auxiliary Amplifier (High Power)			RAY4	4 Parallel Relay Board
*ACUy	Analog Mathematical Calculation	*CLC	Closed Loop Controller (PID)	RAY41	4 Individual Relay Board
ADy	Analog to Encoder Simulator	CVy	At Speed Signal	RRy411-1	4 Reed Relay, Form "C" Board
AGy	Ramp Function Generator	*DDAY	BCD to Analog Converter	RSy	Quad Analog Switch
AGy (P)	Ramp Function Generator (High Power)	*FSy-1	Frequency Synchronizer	RVy	Speed Level Detector
*ALy	Power Supply	*FVy	Encoder to Analog Signal Converter	TVO-1	High Voltage Feedback Isolator
*ALy-P	Power Supply (Precision)		or Differential Pulse Train Input to Analog Converter	XMy	Ribbon Cable to Terminal Adaptor
APSy	Speed Range Extender	IMTy	Input Scaling		

Note: A maximum of (3) option slots are available. Options with \* are double wide providing space for a maximum of (1) double and (1) single wide option card.

### TPy3A Non-Regenerative Dimensions (Inches)

Model No.	Chassis						Panel			NEMA 1 or 1A Enclosed		
	a"	a1"	b"	b1"	c"	lbs.	H"	W"	D"	H"	W"	D"
16	10.55	8.86	12.28	11.81	6.14	17	30	24	7.64	30	24	15
32	10.55	8.86	12.28	11.81	7.56	19	30	24	9.06	30	24	15
56	10.55	8.86	12.28	11.81	10.23	24	30	24	11.73	30	24	15
88	10.55	8.86	12.28	11.81	10.23	28	30	24	11.73	30	24	15
112	10.55	8.86	12.28	11.81	10.23	28	30	24	11.73	30	24	15
148	10.55	8.86	12.28	11.81	10.23	28	30	24	11.73	30	24	15
224	12.16	10.83	13.38	12.8	11.53	51	43	30	13.03	43	30	15
280	12.16	10.83	13.38	12.8	11.53	52	43	30	13.03	43	30	15
336	12.16	10.83	13.38	12.8	11.53	54	43	30	13.03	43	30	15
400	12.16	10.83	13.38	12.8	11.53	54	43	30	13.03	43	30	15
480	12.16	10.83	13.38	12.8	12.59	56						
660-2400	Available in Panel Mount Only						Dimensions are Dependent on Functional Options Chosen. Consult Factory for Dimensions					

### SPECIFICATIONS

#### SERVICE CONDITIONS

Altitude (Standard)	3,300 ft(1000m) Max.
Ambient Temperatures	0 to 40°C (32° to 104°F)
AC Line Voltage Variation	±10%
AC Line Frequency Variation	±2Hz
Service Factor	1.0
Maximum Load	150% for 1 minute
Speed Reference Potentiometer	1 to 10K, 1/2 W 2K typical
AC Input Voltages (50 or 60Hz)	220/240, 380,415, 440/460,480/500

#### ADJUSTMENT RANGE

Maximum Speed	80 to 120%
Minimum Speed	0 to 20% with 2K pot
Accel/Decel (individual adjustment)	0.5 to 5 sec
Selectable Range	0.5 to 5 sec. 3 to 30 sec. or 15 to 150 sec.
Current Limit	0 to 150%
IR (load) compensation	0 to 20%

#### PERFORMANCE CHARACTERISTICS

Operating Range	0 to rated speed
Range for quoted regulation	
Armature feedback with IR Comp	20:1
DC Tachometer Feedback	100:1
Speed Regulation for a 95% load change	
Armature feedback with IR Comp	2 to 5%
Type APY DC Tachometer	1%*

\*% of motor base speed

