

# Morse KE-4a controls

# Morse®



## premium engine control

*(accepts these cables:)  
Universal 3300/33C Types*

### Use KE-4a if . . .

- There are more than 2 stations.
- Throttle and Shift are actuated mechanically (KE-4a has no electronic throttle interface).
- Trolling valve control required.
- Throttle Sync only is needed.
- Electrical system is 12 or 24 volt.
- Hand-held remote desired.
- CANBus interface is not needed. (If needed, see i6000.)

**NOTE:** When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing an electronic interface, universal 3300/33C type cables and appropriate engine connection kits.

The boat's original mechanical control and 3300/33C cables (if so equipped) can be reused for the "get home" (emergency back-up) feature. The back-up control does not have to be mounted, but be certain that the cables used with this control are long enough so that the control can be operated from the steering station.

*(electronic control  
— each lever controls  
throttle AND shift)*

**The KE-4 set the standard for reliability in marine electronic controls.** Its simplicity and proven design make it the choice for most multi-station/multi-engine control pleasure and work boats. KE-4a controls are available in either single or twin lever binnacle mount versions for single or multiple stations and up to two engines.

## Applications:

Electronic stand-alone controls are ideal for larger, multi-station boats, especially those applications in which a mechanical control cannot deliver the desired feel and performance. For nearly all engine types.

## Features:

- Works with most engines: outboard, stern drive or inboard.
- Single or twin engine control; dual function for each lever.
- Up to 4 control heads.
- Optional hand-held remote control: great for docking and fishing!
- Built-in Station Select switch.
- Engine Sync option available.
- Gear shift delay available.
- Neutral engine warm-up provision.
- Mechanical backup (easy to use "get home" system).
- Built-in overload protection & diagnostics.
- Visual failure alarm standard (audio alarm optional).
- Uses standard 3300/33C type control cables on throttle/shift actuator.
- Easy to install. Plug-in connectors.
- 12 and 24 volt capability.
- Meets/exceeds all applicable industry standards.

electronic control: mechanical throttle/shift, up to 4 stations

# KE-4a Engine Controls Basic Ordering Guide:

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
CONTROL HEAD - GOLD FINISH	See next pages		(SINGLE OR TWIN ENGINE)
ELECTRONIC CONTROL UNIT	See next pages		(12 or 24 VDC)
THROTTLE/SHIFT ACTUATOR	NM0165-00		
COMMUNICATION HARNESS	NM0619-05		FOR TWIN ENGINE BOATS ONLY
REMOTE CONTROL HARNESS	See next pages		CONTROL STATION 1 (IN METERS)
REMOTE CONTROL HARNESS	See next pages		CONTROL STATION 2 (IN METERS)
REMOTE CONTROL HARNESS	See next pages		CONTROL STATION 3 (IN METERS)
REMOTE CONTROL HARNESS	See next pages		CONTROL STATION 4 (IN METERS)
5 METER POWER SUPPLY HARNESS	NM0414-28	2 PER CONTROL UNIT	
<b>OR</b>			
10 METER POWER SUPPLY HARNESS	NM0414-33	2 PER CONTROL UNIT	
20 AMP CIRCUIT BREAKER	NJ0514-00	2 PER CONTROL UNIT	RECOMMENDED OPTION
BUZZER	See next pages		(12 or 24 VDC)
3300/33C SERIES CONTROL CABLE	CC633XX		CC633XX RECOMMENDED
<b>OPTIONAL UPGRADES:</b>			
<b>HAND HELD REMOTE:</b>			
HAND HELD CONTROL KIT	NM0906-00		TWIN ENGINE (26' WIRE)
HAND HELD CONTROL KIT	NM0907-00		SINGLE ENGINE (26' WIRE)
REMOTE CONTROL HARNESS	NM0616-XX		XX=LENGTH IN METERS
RELAY KIT (ENGINE CUT-OFF)			(12 or 24 VDC)
<b>SUGGESTED MANUAL "GET HOME" BACKUP SYSTEM:</b>			
3300/33C SERIES CONTROL CABLES (2 PER ENGINE - 1 FOR THROTTLE, 1 FOR SHIFT)			
MECHANICAL CONTROL (ONE SINGLE FUNCTION TWIN LEVER CONTROL PER ENGINE, ONE DUAL FUNCTION SINGLE LEVER CONTROL PER ENGINE OR ONE DUAL FUNCTION TWIN LEVER CONTROL FOR TWIN ENGINES)			
<b>NOTES:</b>			
Controls listed have popular gold tone finish. Several other finishes available. Contact Teleflex Marine for details.			
All Wiring harnesses are measured in meters (1 meter = 39.37 inches).			
XX = Control cable length in feet. Teleflex Control Cables are measured by the foot. For Morse, XXX = inches.			
Check with Engine Manufacturer for Engine Output information.			
<b>QUESTIONS? CALL TECH SUPPORT AT 610-495-7011.</b>			

KE-4a  
TOP MOUNT



ACTUATOR



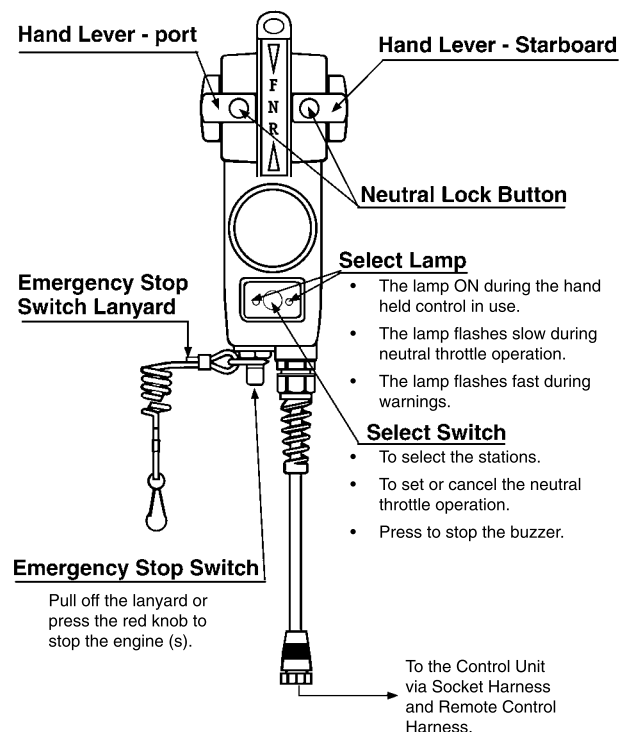
ECU  
(ELECTRONIC  
CONTROL  
UNIT)



HAND HELD  
REMOTE  
CONTROL





## Hand Held Remote Control Overview:

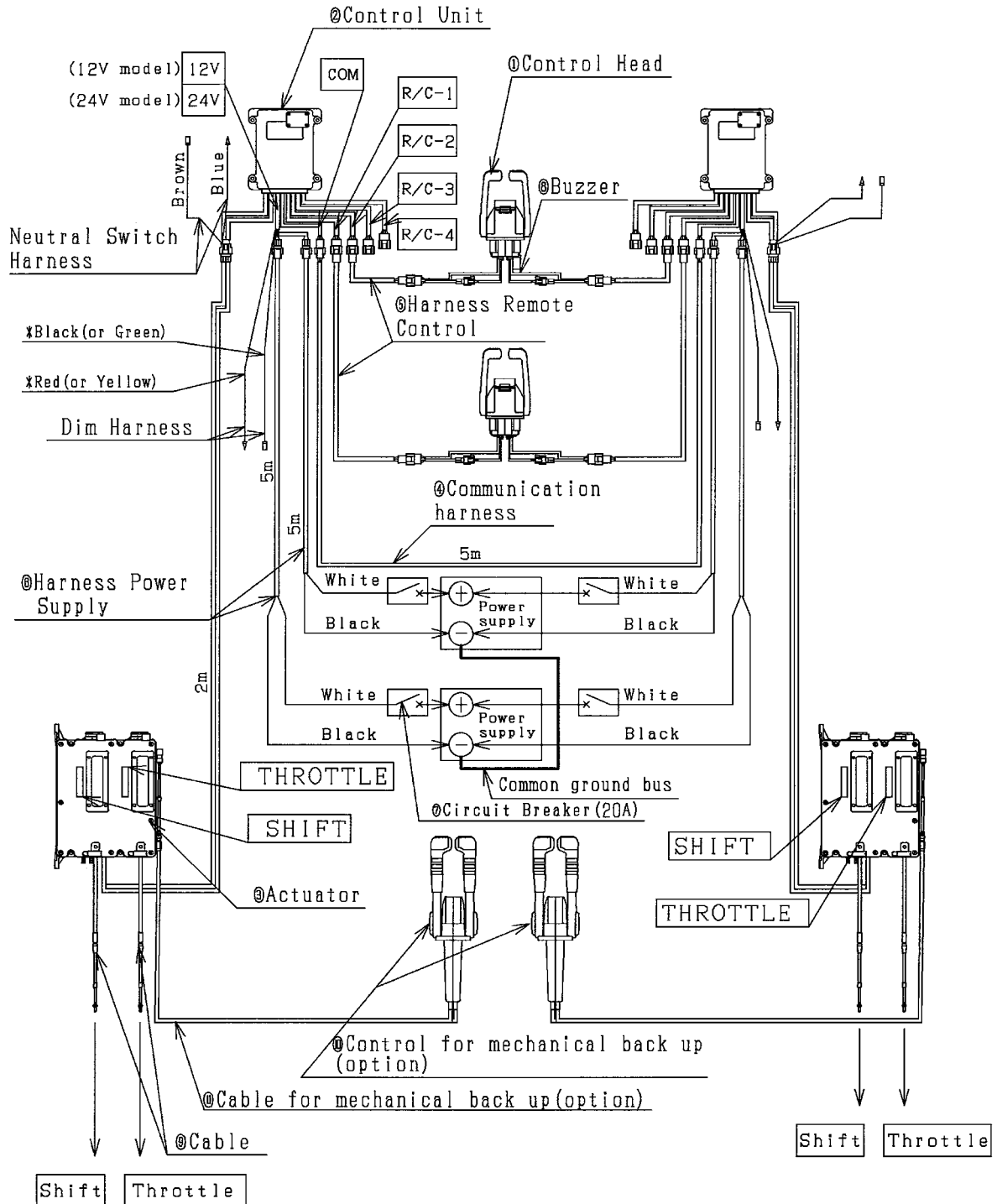


# Morse KE-4a controls

## Basic KE-4a System Overview:

The following schematic shows elements of the KE-4a control system in a typical twin engine/twin station application. For part numbers associated with the items depicted below, please see the page at right.

-  : Indicates identification
-  : Indicates the destination of connection



electronic control: mechanical throttle/shift, up to 4 stations

## KE-4a System Components:

The following chart lists components of the KE-4a control system for each application. For an illustration of each component, please see the page at left.

No.	Name	Part No.	Required for Single engine No. of Station				Required for Two engine No. of Station				Notes
			1st	2nd	3rd	4th	1st	2nd	3rd	4th	
1	Control Head-Single Engine	NM0511-00	1	2	3	4	-	-	-	-	
	Control Head-Twin Engine	NM0510-00	-	-	-	-	1	2	3	4	
2	Control Unit										
	24V model	NM0478-00	1	1	1	1	2	2	2	2	
	12V model	NM0477-00	1	1	1	1	2	2	2	2	
3	Throttle/Shift Actuator	NM0165-00	1	1	1	1	2	2	2	2	
4	Communication										
	Harness 5m	NM0619-05	-	-	-	-	1	1	1	1	
5	Harness - 4m	NM0616-04									
	Remote 6m	NM0616-06									
	Control 8m	NM0616-08									
	10m	NM0616-10									
	12m	NM0616-12									
	14m	NM0616-14									
	16m	NM0616-16									
	18m	NM0616-18									
	20m	NM0616-20									
	22m	NM0616-22	1	2	3	4	2	4	6	8	
	24m	NM0616-24									
	26m	NM0616-26									
	28m	NM0616-28									
	30m	NM0616-30									
6	Harness - 5m	NM0414-28	2	2	2	2	4	4	4	4	
	Power 10m	NM0414-33									
7	Circuit Breaker										
	20A	NJ0514-00	2	2	2	2	4	4	4	4	Option
8	Buzzer 24V model	NJ0515-00	1	2	3	4	2	4	6	8	Option
	12V model	NJ0596-00 (replaces NJ0251-00)									
9	Cable (actuator)	33C									
		33C Supreme	2	2	2	2	4	4	4	4	Specify cable length
		3300CC TFX TREME									
10	Mechanical Control Head (for manual backup operation)	Use standard Morse control head	1	1	1	1	2	2	2	2	Option
11	Cable (for manual backup operation)	33C									
		33C Supreme	2	2	2	2	4	4	4	4	Specify cable length
		3300CC TFX TREME									

**NOTES:**

Please refer to the NAME OF EACH PART on previous page for the item number in chart above.

All Wiring harnesses are measured in meters (1 meter = 39.37 inches).

CC633XX is recommended. Teleflex Control Cables are measured by the foot. XX = Control cable length in feet. For Morse, XXX = inches.

Using 20 amp circuit breaker NJ0514-00 is strongly recommended.

# Morse KE-5 controls

# Morse®



## premium engine control

*A descendent of the popular and proven KE-4, this control has the superior performance you would expect — plus control of electronic engines!*

### *Use KE-5 if . . .*

- There are more than 2 stations.
- Throttle and Shift are actuated electronically (KE-5 has no mechanical throttle or shift interface)
- Trolling valve control required.
- Engine Sync is needed.
- Electrical system is 12 or 24 volt.
- Hand-held remote desired.
- CANBus interface is not needed. (If needed, see i6000.)

**NOTE:** When properly installed, these engine controls will connect to inboard engines, utilizing an electronic interface.

*(electronic control  
— each lever controls  
throttle AND shift)*

**Built to the High Standards of KE-4 . . . With fully Electronic Throttle and Shift Control for Today's Inboard Engines!** Rugged, reliable and as boater-friendly as the KE-4, KE-5 adds electronic throttle and shift for one or two engines from up to 5 stations, optional full engine synchronization and trolling control.

## *Applications:*

These electronic stand-alone controls are ideal for larger boats with up to two electronically controlled inboard engines and as many as five stations.

## *Features:*

- Works with most inboard engines requiring electronic throttle and shift control.
- Single or twin engine control; dual function for each lever.
- Up to 5 control heads.
- Optional hand-held remote control: great for docking!
- Built-in Station Select switch.
- Engine Sync option available.
- Gear shift delay available.
- Neutral engine warm-up provision.
- Built-in overload protection & diagnostics.
- Visual failure alarm standard (audio alarm optional).
- Easy to install. Plug-in connectors.
- 12 and 24 volt capability.
- Meets/exceeds all applicable industry standards.

electronic throttle/shift control, up to 5 stations

# KE-5 Engine Controls Basic Ordering Guide:

## KE-5 TOP MOUNT



## ECU (ELECTRONIC CONTROL UNIT)



## HAND HELD REMOTE CONTROL



ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
CONTROL HEAD - GOLD FINISH			
ELECTRONIC CONTROL UNIT	NM0492-00	1 PER ENGINE	
COMMUNICATION HARNESS	NM0619-05		FOR TWIN ENGINE BOATS ONLY
REMOTE CONTROL HARNESS			CONTROL STATION 1 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 2 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 3 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 4 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 5 (IN METERS)
HARNESS SHIFT/THROTTLE			THROTTLE OUTPUT ARE
	NM0626-05		ALL 5 METERS IN LENGTH
	NM0625-05		TYPE 1 FOR CURRENT OUTPUT (MTU)
			TYPE 2 FOR VOLTAGE OUTPUT
			(CUMMINS, DETROIT,
			JOHN DEERE, SCANIA)
	NM0631-05		TYPE 3 FOR PWM OUTPUT
			(CATERPILLAR)
5 METER POWER SUPPLY HARNESS	NM0414-28	2 PER CONTROL UNIT	
OR			
10 METER POWER SUPPLY HARNESS	NM0414-33	2 PER CONTROL UNIT	
10 AMP CIRCUIT BREAKER	NJ0595-00	2 PER CONTROL UNIT	STRONGLY RECOMMENDED
			OPTION
BUZZER 12 VOLT SYSTEMS	NJ0596-00	(replaces NJ0251-00)	OPTION
BUZZER 24 VOLT SYSTEMS	NJ0515-00		OPTION
<b>OPTIONAL UPGRADES:</b>			
<b>HAND HELD REMOTE:</b>			
HAND HELD CONTROL KIT	NM0906-00		TWIN ENGINE
			26' WIRE FROM MOUNTING AREA
HAND HELD CONTROL KIT	NM0907-00		SINGLE ENGINE
			26' WIRE FROM MOUNTING AREA
REMOTE CONTROL HARNESS RELAY KIT (ENGINE CUT-OFF)	NM0616-XX		XX=LENGTH IN METERS
			12 OR 24 VOLT
<b>SYNCHRONIZATION:</b>			
SYNC MASTER HARNESS	NM0605-01		
SYNC SLAVE HARNESS	NM0605-02		
SYNC SWITCH	NJ0524-00		
SWITCH HARNESS	NM0617-XX		IN 5 METER LENGTHS (5M TO 50M)
<b>TROLLING:</b>			
TROLLING SWITCH	NM0228-00	1 PER STATION	
TROLLING UNIT	NM0493-00		
HARNESS TROLLING OUTPUT	NM0627-05	1 PER ENGINE	5 METER
COMMUNICATION/POWER HARNESS	NM0611-XX		XX=LENGTH (1 TO 5 METERS)
TROLLING HARNESS	NM0618-XX	1 PER STATION	4 TO 50 METERS
TROLLING SLAVE HARNESS	NM0621-01		TWIN ENGINE ONLY
<b>NOTES:</b>			
<i>All Wiring harnesses are measured in meters (1 meter = 39.37 inches).</i>			
<i>Check with Engine Manufacturer for Engine Output information.</i>			
<b>QUESTIONS? CALL TECH SUPPORT AT 610-495-7011.</b>			

## TROLLING VALVE ACTUATOR

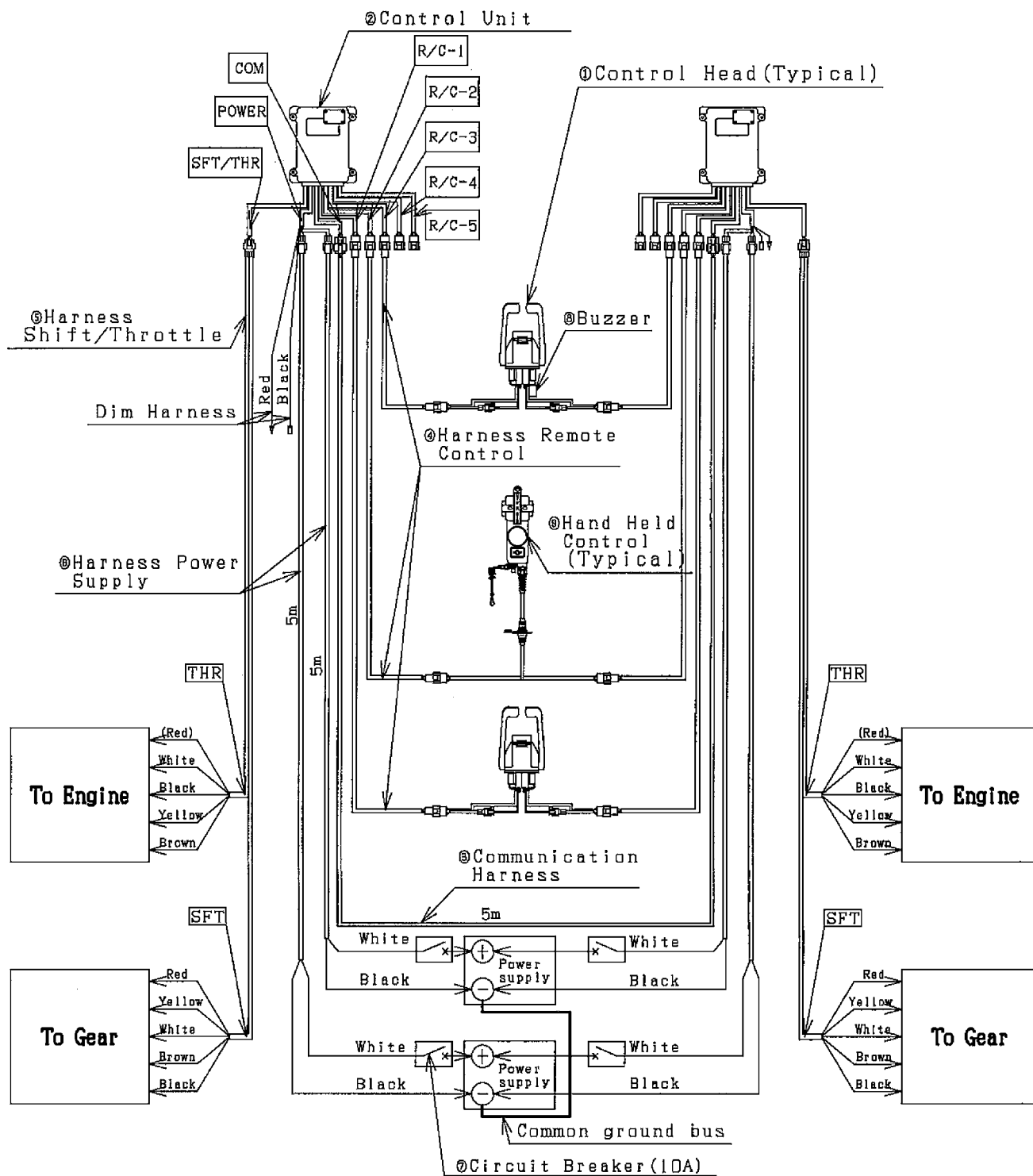


CONTROLS electronic stand-alone

# Morse KE-5 controls

## Basic KE-5 System Overview:

The following schematic shows elements of the KE-5 control system in a typical twin engine/twin station application. For part numbers associated with the items depicted below, please see the page at right.



CONTROLS electronic stand-alone

electronic throttle/shift control, up to 5 stations

## KE-5 System Components:

The following chart lists components of the KE-5 control system for each application. For an illustration of each component, please see the page at left.

No.	Name	Part No.	Required for Single engine No. of Station					Required for Two engine No. of Station					Notes
			1st	2nd	3rd	4th	5th	1st	2nd	3rd	4th	5th	
1	Control Head-Single Engine	NM0511-00	1	2	3	4	5	-	-	-	-	-	
	Control Head-Twin Engine	NM0510-00	-	-	-	-	-	1	2	3	4	5	
2	Control Unit	NM0492-00	1	1	1	1	1	2	2	2	2	2	
3	Communication												
	Harness 5m	NM0619-05	-	-	-	-	-	1	1	1	1	1	
4	Harness - 4m	NM0616-04											
	Remote 6m	NM0616-06											
	Control 8m	NM0616-08											
	10m	NM0616-10											
	12m	NM0616-12											
	14m	NM0616-14											
	16m	NM0616-16											
	18m	NM0616-18											
	20m	NM0616-20											
	22m	NM0616-22	1	2	3	4	5	2	4	6	8	10	
	24m	NM0616-24											
	26m	NM0616-26											
	28m	NM0616-28											
	30m	NM0616-30											
	32m	NM0616-32											
	34m	NM0616-34											
	36m	NM0616-36											
	38m	NM0616-38											
	40m	NM0616-40											
	50m	NM0616-50											
5	Harness - Shift/Throttle												
	Type1 5m	NM0626-05											For current output
	Type2 5m	NM0629-05	1	1	1	1	1	2	2	2	2	2	For voltage output
	Type3 5m	NM0631-05											For PWM output
6	Harness - Power												
	5m	NM0414-28	2	2	2	2	2	4	4	4	4	4	
	10m	NM0414-33											
7	Circuit Breaker												
	10A	NJ0595-00	2	2	2	2	2	4	4	4	4	4	Option
8	Buzzer												
	24V model	NJ0515-00	1	2	3	4	5	2	4	6	8	10	Option
	12V model	NJ0596-00 (replaces NJ0251-00)											
9	Hand Held Control	You can use the Hand Held Control in place of the Control Head (Item 1) Consult Teleflex Marine for details.											Option

**NOTES:**

Please refer to the NAME OF EACH PART on previous page for the item number in chart above.

Select Item #5 Harness-Shift Act/Throttle depending on the type of throttle output. Contact Teleflex Marine for more information.



# Morse KE-6 controls

# Morse®



## premium engine control

*A descendent of the popular and proven KE-4, this control has the superior performance you would expect — plus control for engines with electronic throttle and mechanical shift.*

### *Use KE-6 if . . .*

- There are more than 2 stations.
- Throttle is actuated electronically and Shift is actuated mechanically (KE-6 has no mechanical throttle interface)
- Trolling valve control is not required.
- Engine Sync is needed.
- Electrical system is 12 or 24 volt.
- Hand-held remote desired.
- CANBus interface is not needed. (If needed, see i6000.)

**NOTE:** When properly installed, these engine controls will connect to inboard engines, utilizing an electronic throttle interface and mechanical shift interface.

*(electronic control  
— each lever controls  
throttle AND shift)*

**Built to the High Standards of KE-4 . . . With fully Electronic Throttle and Mechanical Shift Control for Today's Inboard Engines!** Rugged, reliable and as boater-friendly as the KE-4, KE-6 adds electronic throttle for one or two engines from up to 4 stations and optional full engine synchronization.

## *Applications:*

These electronic stand-alone controls are ideal for larger boats with up to two electronically-throttled/mechanically-shifted inboard engines and up to four stations.

## *Features:*

- Works with most inboard engines with electronic throttle and mechanical shift.
- Single or twin engine control; dual function for each lever.
- Up to 4 control heads.
- Optional hand-held remote control: great for docking!
- Built-in Station Select switch.
- Engine Sync option available.
- Gear shift delay available.
- Neutral engine warm-up provision.
- Built-in overload protection & diagnostics.
- Visual failure alarm standard (audio alarm optional).
- Uses standard 3300/33C type control cables on throttle/shift actuator.
- Easy to install. Plug-in connectors.
- 12 and 24 volt capability.
- Meets/exceeds all applicable industry standards.

electronic throttle/mechanical shift, up to 4 stations

# KE-6 Engine Controls Basic Ordering Guide:

## KE-6 TOP MOUNT



## SHIFT ACTUATOR



## ECU (ELECTRONIC CONTROL UNIT)



## HAND HELD REMOTE CONTROL



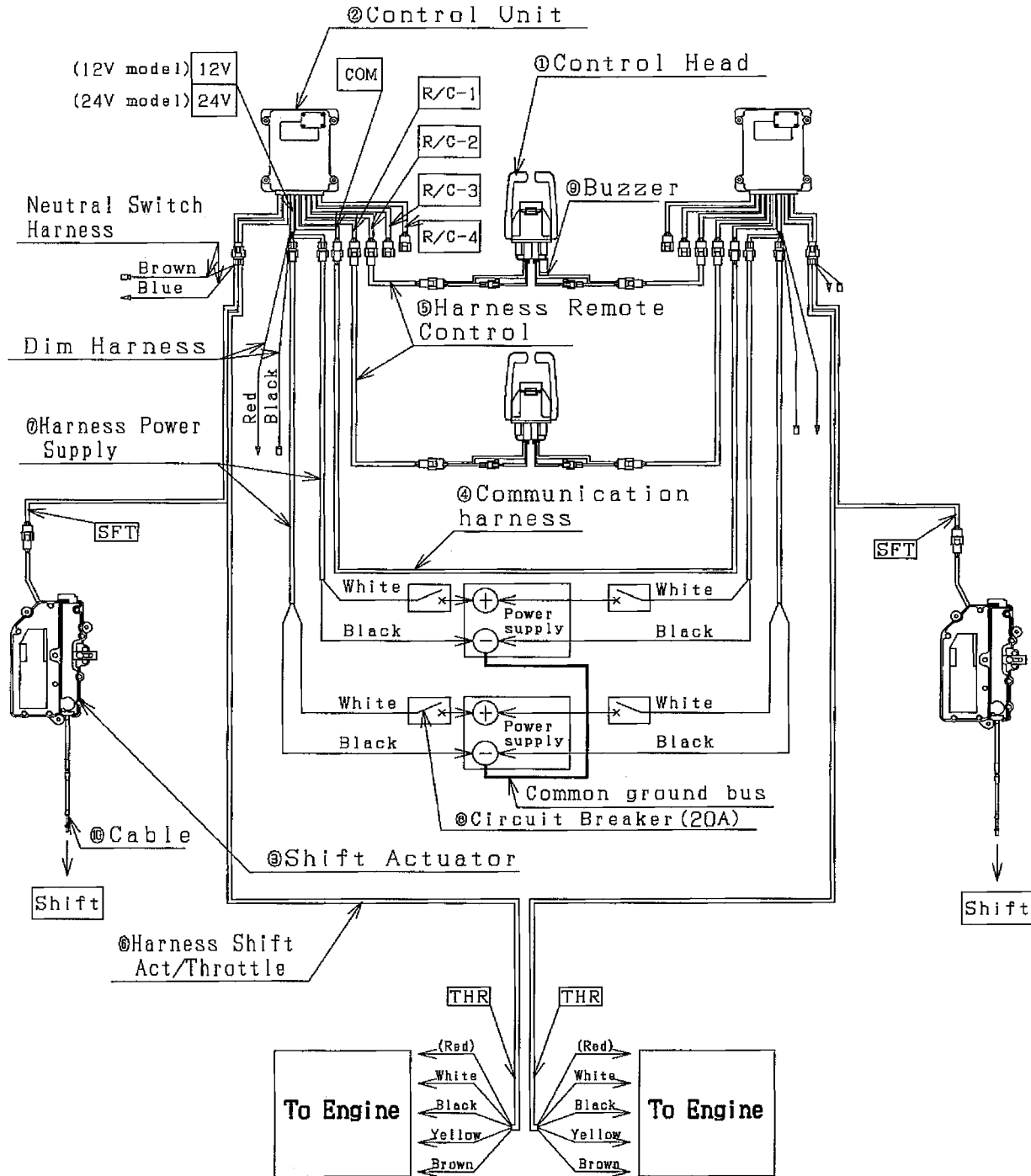
ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
CONTROL HEAD - GOLD FINISH		1 PER STEERING STATION	
CONTROL UNIT		1 PER ENGINE	(12 OR 24 VOLTS)
SHIFT ACTUATOR	NM0172-00	1 PER TRANSMISSION	
COMMUNICATION HARNESS	NM0619-05		FOR TWIN ENGINE BOATS ONLY
REMOTE CONTROL HARNESS			CONTROL STATION 1 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 2 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 3 (IN METERS)
REMOTE CONTROL HARNESS			CONTROL STATION 4 (IN METERS)
HARNESS SHIFT ACTUATOR/THROTTLE			THROTTLE OUTPUT ARE ALL 5 METERS IN LENGTH
	NM0630-05		TYPE 1 FOR CURRENT OUTPUT (MTU)
	NM0629-05		TYPE 2 FOR VOLTAGE OUTPUT (CUMMINS, DETROIT, JOHN DEERE, SCANIA)
	NM0632-05		TYPE 3 FOR PWM OUTPUT (CATERPILLAR)
5 METER POWER SUPPLY HARNESS	NM0414-28	2 PER CONTROL UNIT	
<b>OR</b>			
10 METER POWER SUPPLY HARNESS	NM0414-33	2 PER CONTROL UNIT	
20 AMP CIRCUIT BREAKER	NJ0514-00	2 PER CONTROL UNIT	STRONGLY RECOMMENDED OPTION
BUZZER 12 VOLT SYSTEMS	NJ0596-00	(replaces NJ0251-00)	OPTION
BUZZER 24 VOLT SYSTEMS	NJ0515-00		OPTION
3300/33C SERIES CONTROL CABLE	CC633XX	1 PER ENGINE	CC633XX RECOMMENDED
<b>OPTIONAL UPGRADES:</b>			
<b>HAND HELD REMOTE:</b>			
HAND HELD CONTROL KIT	NM0906-00		TWIN ENGINE 26' WIRE FROM MOUNTING AREA
HAND HELD CONTROL KIT	NM0907-00		SINGLE ENGINE 26' WIRE FROM MOUNTING AREA
REMOTE CONTROL HARNESS RELAY KIT (ENGINE CUT-OFF)	NM0616-XX		XX=LENGTH IN METERS 12 OR 24 VOLT
<b>SYNCHRONIZATION:</b>			
SYNC MASTER HARNESS	NM0605-01		
SYNC SLAVE HARNESS	NM0605-02		
SYNC SWITCH	NJ0524-00		
SWITCH HARNESS			IN 5 METER LENGTHS FROM 5M TO 50M
<b>NOTES:</b>			
<i>All Wiring harnesses are measured in meters (1 meter = 39.37 inches).</i>			
<i>XX = Control cable length in feet. Teleflex Control Cables are measured by the foot. For Morse, XXX = inches.</i>			
<i>Check with Engine Manufacturer for Engine Output information.</i>			
<b>QUESTIONS? CALL TECH SUPPORT AT 610-495-7011.</b>			

CONTROLS electronic stand-alone

# Morse KE-6 controls

## Basic KE-6 System Overview:

The following schematic shows elements of the KE-6 control system in a typical twin engine/twin station application. For part numbers associated with the items depicted below, please see the page at right.



electronic throttle/mechanical shift, up to 4 stations

## KE-6 System Components:

The following chart lists components of the KE-6 control system for each application. For an illustration of each component, please see the page at left.

No.	Name	Part No.	Required for Single engine No. of Station				Required for Two engine No. of Station				Notes	
			1st	2nd	3rd	4th	1st	2nd	3rd	4th		
1	Control Head-Single Engine	NM0511-00	1	2	3	4	-	-	-	-		
	Control Head-Twin Engine	NM0510-00	-	-	-	-	1	2	3	4		
2	Control Unit											
	24V model	NM1402-00	1	1	1	1	2	2	2	2		
	12V model	NM1401-00	1	1	1	1	2	2	2	2		
3	Shift Actuator	NM0172-00	1	1	1	1	2	2	2	2		
4	Communication											
	Harness	5m	NM0619-05	-	-	-	-	1	1	1	1	
5	Harness -	4m	NM0616-04									
	Remote	6m	NM0616-06									
	Control	8m	NM0616-08									
		10m	NM0616-10									
		12m	NM0616-12									
		14m	NM0616-14									
		16m	NM0616-16									
		18m	NM0616-18									
		20m	NM0616-20									
		22m	NM0616-22	1	2	3	4	2	4	6	8	
		24m	NM0616-24									
		26m	NM0616-26									
		28m	NM0616-28									
		30m	NM0616-30									
		32m	NM0616-32									
		34m	NM0616-34									
		36m	NM0616-36									
		38m	NM0616-38									
		40m	NM0616-40									
		50m	NM0616-50									
6	Harness -	Type1										
	Shift/	5m	NM0630-05								For current output	
	Throttle	Type2										
		5m	NM0629-05	1	1	1	1	2	2	2	2	For voltage output
		Type3										
		5m	NM0632-05									For PWM output
7	Harness -	5m	NM0414-28	2	2	2	2	4	4	4	4	
	Power	10m	NM0414-33									
8	Circuit											
	Breaker	20A	NJ0514-00	2	2	2	2	4	4	4	4	Option
9	Buzzer	24V model	NJ0515-00	1	2	3	4	2	4	6	8	Option
		12V model	NJ0596-00 (replaces NJ0251-00)									
10	Cable	3300CC/33C	CC633XX	1	1	1	1	2	2	2	2	Specify cable length
	- Hand Held	You can use the Hand Held Control in place of the Control Head (Item 1)									Option	
	Control	Consult Teleflex Marine for details. (Hand Held not shown in diagram at left.)										

**NOTES:**

Please refer to the NAME OF EACH PART on previous page for the item number in chart above.

Select Item #6 Harness-Shift Act/Throttle depending on the type of throttle output. Contact Teleflex Marine for more information.

# Teleflex i6000 controls

## Teleflex<sup>®</sup> MARINE

*(electronic control  
— each lever controls  
throttle AND shift)*

CH645XX



CH646XX



CH44XXe



CH5600e



ECU



ACTUATOR



TRIPLE ENGINE  
SELECT PANEL

**Our i6000 combines advanced electronics with over 50 years of mechanical engine control know-how into a system that is the best of all worlds for nearly any boat! The i6000 feels like a control because lever action, throttle and shift response and much more can be tailored to your preferences. Control UP TO 3 ENGINES from ONE CONTROL with Full Power Train Sync!**

## Applications:

i6000 can be used on nearly any boat with 1-2 stations and 1-3 engines, even jet drives.

## Features:

- Works with Nearly Any Boat/Engine!
- Modern & Traditional-styles available.
- Superior feel & sensitivity.
- Independent, adjustable lever feel to suit operator without removing cover!
- Optional Trim Control in the handle!
- Most operation preferences are user-adjustable, including throttle curves, shift delays and much more!
- Full Drive Train Sync with superior memory — Unbeatable One-Hand Control!
- Separate Throttle/Shift Actuators provide great mounting flexibility and double potentiometers for failsafe operation.
- Start-In-Gear Protection, Shift delays.
- Coded Station Select™ (station protection).
- Easy to use emergency “get home” feature.
- Uses standard 3300/33C type control cables on throttle/shift actuator.
- Easy to install with color-coded plug-in connectors.
- Diagnostics (with 100-incident buffer).
- 12 and 24 volt capability.
- Meets/exceeds all applicable standards.

## Use i6000 if . . .

- 1 or 2 stations, 1-3 engines and jets.
- Superior feel and user-adjustable operational preferences are needed.
- Superior One-Touch Engine Sync needed.
- Station Lockout needed.
- Traditional control styling is desired.
- Throttle and Shift are actuated mechanically or electronically.
- Electrical system is 12 or 24 volt.
- Using/adding CANBus/NMEA devices.

**NOTE:** When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing an electronic interface, special 3300/33C type cables and appropriate engine connection kits.

electronic CANBus control, up to 3 engines and 2 stations

# *i6000 Control System Diagram*

*(dual station, dual engine shown)*



**NOTE:** the "xx" suffix of wire harness part numbers is for the length of the harness in feet. Please see Ordering Guide or part number listing for available lengths for each harness.

Teleflex CANBus network is required for CANBus tachometers and engine synchronization in multi-engine systems:

- CM100xx – Network comm. cable
- CM10050 – CANBus tee
- CM10051 – Male terminator
- CM10052 – Female terminator
- CM10401 – ECU CANBus connection harness

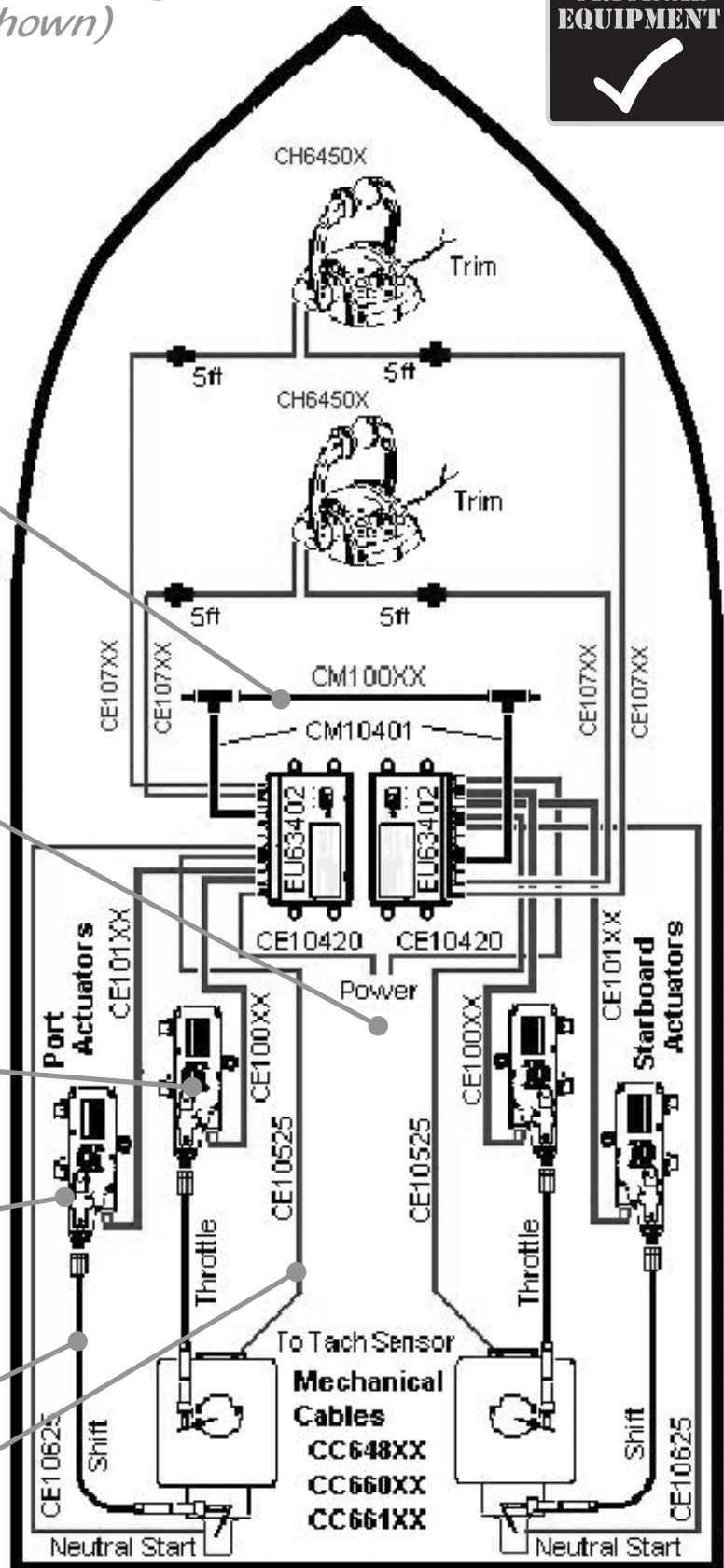
12 or 24 VDC Power must be supplied through a grounded Circuit Breaker providing 10 Amp service for each ECU installed.

Systems with Electronic Shift capability may replace the Mechanical Shift Actuator, its Actuator Cable and its associated wire harness (CE100xx) with wire harness CE108xx, which connects directly from the ECU to the engine's electronic shifter.

Systems with Electronic Throttle Control capability may replace the Mechanical Throttle Actuator, its Actuator Cable and its associated wire harness (CE101xx) with wire harness CE109xx, which connects directly from the ECU to the engine's electronic throttle body.

Wire harness CE106xx connects to the engine's starter or ignition circuit and provides Neutral Start Protection.

Wire harness CE105xx provides tachometer information passed on to the CANBus by the ECU.



CONTROLS electronic CANBus

*Please see next page for Ordering Guide and Part Numbers.*

# Teleflex i6000 controls

## Single Station, Single Engine:

Mechanical throttle & mechanical shift control for ONE engine.

System Code: O-SSSE-TS

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	1	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	1	
Actuator - Shift (std.)	AC64022	1	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	2	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Standard	EU64403	1	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	1	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	1	SEE NOTE 5
i6000 Cable Kit - Sgl. Eng.	i1001-SEX	1	SEE NOTE 6
CAN ECU Com Harness	CM10401	1	(1' harness)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
Battery Cable Kit	CE201XX	1	SEE NOTE 8
Module - DC Relay	i1001	1	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	1	SEE NOTE 10
CAN Trunk Cable	CM100XX	1	SEE NOTES 7 & 11
CAN ECU Com Harness	CM10401	1	(1' harm.) SEE NOTE 11
CAN Com Kit (Ts/terminals)	CM20001	1	SEE NOTE 11

## Dual Station, Single Engine:

Mechanical throttle & mechanical shift control for ONE engine.

System Code: O-DSSE-TS

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	2	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	1	
Actuator - Shift (std.)	AC64022	1	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	2	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Standard	EU64403	1	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	1	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	1	SEE NOTE 5
i6000 Cable Kit - Sgl. Eng.	i1001-SEX	1	SEE NOTE 6
CAN ECU Com Harness	CM10401	1	(1' cable)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
CAN Com Kit (Ts/terminals)	CM20001	1	
Battery Cable Kit	CE201XX	1	SEE NOTE 8
Module - DC Relay	i1001	1	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	1	SEE NOTE 10
CAN Trunk Cable	CM100XX	1	SEE NOTES 7 & 11
CAN ECU Com Harness	CM10401	1	(1' harm.) SEE NOTE 11
CAN Com Kit (Ts/terminals)	CM20001	1	SEE NOTE 11

Select system components based on number of control stations and engines.

## Single Station, Dual Engine:

Mechanical throttle & mechanical shift control for TWO engines.

System Code: O-SSDE-TS

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	1	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	2	
Actuator - Shift (std.)	AC64022	2	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	4	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Standard	EU64403	2	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	2	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	2	SEE NOTE 5
i6000 Cable Kit - Dual Eng.	i1001-DEXX	1	SEE NOTE 6
CAN ECU Com Harness	CM10401	1	(1' harness)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
CAN Trunk Cable	CM100XX	1	SEE NOTE 7
CAN Com Kit (Ts/terminals)	CM20001	1	
Battery Cable Kit	CE201XX	1	SEE NOTE 8
Module - DC Relay	i1001	1	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	2	SEE NOTE 10

## Dual Station, Dual Engine:

Mechanical throttle & mechanical shift control for ONE engine.

System Code: O-DSDE-TS

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	2	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	2	
Actuator - Shift (std.)	AC64022	2	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	4	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Standard	EU64403	2	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	2	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	2	SEE NOTE 5
i6000 Cable Kit - Dual Eng.	i1001-DEXX	1	SEE NOTE 6
CAN ECU Com Harness	CM10401	2	(1' harness)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
CAN Trunk Cable	CM100XX	1	SEE NOTE 7
CAN Com Kit (Ts/terminals)	CM20001	1	
Battery Cable Kit	CE201XX	1	SEE NOTE 8
Module - DC Relay	i1001	1	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	2	SEE NOTE 10



**Single Station, Triple Engine:**

Mechanical throttle & mechanical shift control for THREE engines.

**System Code: O-SSTE-TS**

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	1	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	3	
Actuator - Shift (std.)	AC64022	3	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	6	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Triple Engine	EU64433	3	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	3	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	3	SEE NOTE 5
i6000 Cable Kit - Triple Eng.	i1001-TEXX	1	SEE NOTE 9
CAN ECU Com Harness	CM10401	3	(1' harness)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
CAN Trunk Cable	CM100XX	1	SEE NOTE 7
CAN Com Kit (Ts/terminals)	CM20001	1	
Control Panel - Triple Engine	CP67600	1	
"Y" Harness - Triple Engine	CE13000	1	(18" harness)
CAN T-Connector	CM10050	1	
Battery Cable Kit	CE201XX	2	SEE NOTE 8
Module - DC Relay	i1001	2	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	3	SEE NOTE 10

**NOTES:**

- CONTROL HEADS — SINGLE ENGINE USE ONLY:**

**CH64600** Top Mount Single Lever no engine trim capability  
**CH64601** Top Mount Single Lever WITH engine trim in handle

**CONTROL HEADS — DUAL AND TRIPLE ENGINE USE:**

**CH64500** Top Mount Dual Lever no engine trim capability  
**CH64502** Top Mount Dual Lever WITH trim in handle

**TRADITIONALLY STYLED UNITS ALSO AVAILABLE:**  
**SINGLE STATION USE ONLY (2 ENGINES MAX.; 1 HEAD/ENGINE):**  
**CH5600e** Top Mount Twin Lever, Domed Binnacle Design  
**CH4451e** Top Mount Twin Lever (smooth action)  
**CH4481e** Top Mount Twin Lever (raked levers, smooth action)  
**CH4482e** Top Mount Twin Lever (raked levers, ratchet action)  
 (Since traditionally-styled controls are designed to look like their mechanical counterparts, they do not have built-in control buttons or displays. When ordering one of these controls, you will also need a Display/Control unit, which requires a 4" wide X 3-1/8" high (minimum) flat mounting surface with a 2-1/2" hole cutout.)  
**CP1100** Display/Control Unit (single engines only)  
**CP1200** Display/Control Unit (dual engines only)
- AC64022 is recommended for most applications; AC64023 is recommended for stern drives and Honda outboards. Systems listed are for mechanically shifted transmissions. For electric shift, order the following components:  
**CE10825** Harness-25', ECU to Transmission (1 per engine)  
**CE10010** Harness-10', ECU to Shift Actuator (1 per engine)  
**AC64022** Actuator - Shift (standard duty) (1 per engine) OR  
**AC64023** Actuator - Shift (high load) (1 per engine)
- XX in part number = cable length in feet. This cable is available in 3-25 foot lengths (in 1-foot increments). Engine connection kits may be required for this cable. Please see engine connection kits section elsewhere in this catalog. (2005 Yamaha 225/250 engines require use of one CA38383P per each actuator control cable.)

**Dual Station, Triple Engine:**

Mechanical throttle & mechanical shift control for THREE engines.

**System Code: O-DSTE-TS**

ITEM DESCRIPTION	PART #	QTY.	NOTES
<b>BASIC SYSTEM COMPONENTS:</b>			
<b>CONTROL HEAD:</b>			
Control Head (several avail.)	CH64XXX	2	SEE NOTE 1
<b>ACTUATORS:</b>			
Actuator - Throttle (std.)	AC64021	3	
Actuator - Shift (std.)	AC64022	3	SEE NOTE 2
<b>CONTROL CABLE FOR ACTUATOR:</b>			
Control Cable - Actuator	CC648XX	6	SEE NOTE 3
<b>ELECTRONIC CONTROL UNITS (ECUs):</b>			
ECU - Triple Engine	EU64433	3	SEE NOTE 4
<b>CABLES, HARNESSSES &amp; OTHER:</b>			
Harness - ECU-Shift Act.	CE100XX	3	SEE NOTE 5
Harness - ECU-Throttle Act.	CE101XX	3	SEE NOTE 5
i6000 Cable Kit - Triple Eng.	i1001-TEXX	1	SEE NOTE 9
CAN ECU Com Harness	CM10401	3	(1' harness)
Harness - Neut. Start Protect	CE10625	1	(25' harness)
Harness - Tach Input	CE10525	1	(25' harness)
CAN Trunk Cable	CM100XX	1	SEE NOTE 7
CAN Com Kit (Ts/terminals)	CM20001	1	
Control Panel - Triple Engine	CP67600	2	
"Y" Harness - Triple Engine	CE13000	1	(18" harness)
CAN T-Connector	CM10050	1	
Battery Cable Kit	CE201XX	2	SEE NOTE 8
Module - DC Relay	i1001	2	
i6000 Instruction Manual	MANUSER6000	1	
<b>OPTIONAL COMPONENTS (select as needed):</b>			
Ext. Harness - Control-ECU	CE107XX	3	SEE NOTE 10

- ECU part numbers/descriptions are as follows:  
**EU64403** ECU for all applications EXCEPT triple engines  
**EU64433** ECU for triple engines only
- XX in part number = harness length in feet. This harness is available in lengths of: 3, 5, 8, 10, 12, 15, and 18 feet.
- XX in part number = cable kit length in feet. This cable kit is available in lengths of: 5 and 10 feet.
- XX in part number = cable length in feet. This CAN trunk cable is available in lengths of: 1, 2, 3, 6, 9, 12, 16, 20 and 30 feet.
- XX in part number = cable kit length in feet. This battery cable kit is available in lengths of: 10 and 20 feet.
- XX in part number = cable kit length in feet. This cable kit is available in lengths of: 5, 10 and 15 feet.
- XX in part number = harness length in feet. This extension harness is available in lengths of: 5, 10, 15, 20, 25 and 30 feet.
- These options are required on single engine systems if connecting other CANBus devices to the system. (They are included as standard in the dual and triple engine systems since multiple engines must communicate during control system operation.)

**JET DRIVE CONTROL SYSTEMS: PLEASE CONTACT TELEFLEX MARINE.**

**TO ENSURE CUSTOMER SATISFACTION,  
 THIS PRODUCT REQUIRES THE SELLER  
 TO BE TECHNICALLY CERTIFIED BY  
 TELEFLEX MARINE.  
 (Please Contact Teleflex Marine for Details.)**

