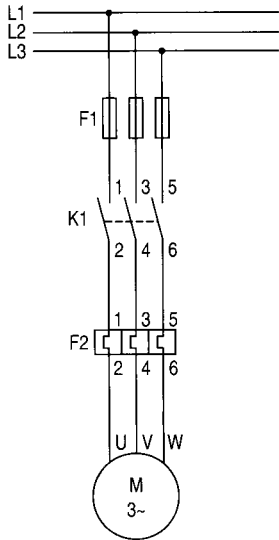
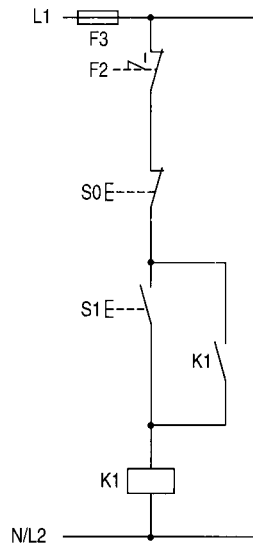


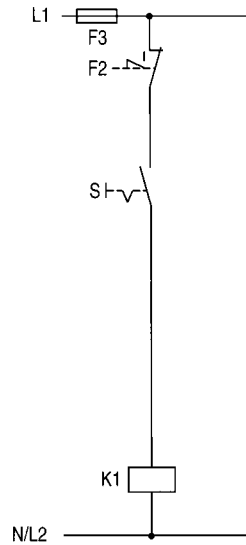
## Typical circuit diagram of Direct On Line starter



a) Main circuit



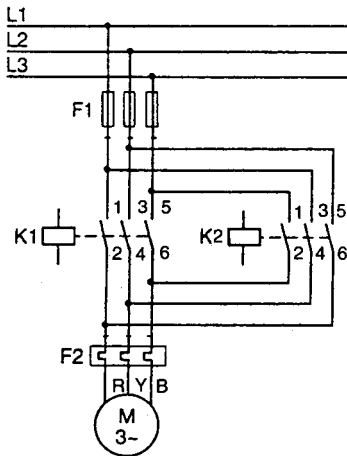
b) Control circuit for momentary-contact control



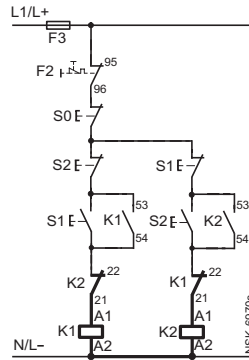
c) Control circuit for maintained-contact control

- S0 = 'OFF' Push button
- S1 = 'ON' Push button
- S = Maintained command switch
- K1 = Main contactor
- F1 = Main circuit fuse
- F2 = Overload relay
- F3 = Control circuit fuse

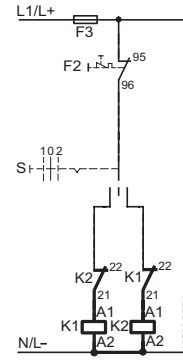
## Typical circuit diagram of Forward / Reverse starter (Electrical Interlocking)



Main circuit



Push button control  
(momentary command)



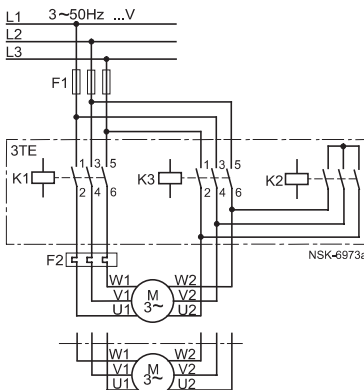
Selector switch control  
(command needs to be maintained)

- S0 : 'OFF' Push button
- S1 : 'ON Clockwise' Push button
- S2 : 'ON Anti-clockwise' Push button
- S : Selector Switch 'Clockwise - OFF - Anti-clockwise'

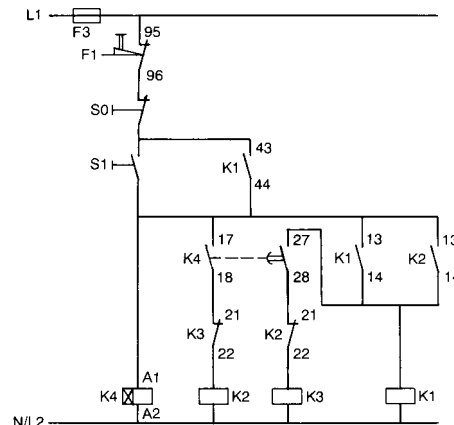
- K1 : Clockwise contactor
- K2 : Anti-clockwise contactor

- F1 : Main circuit fuses
- F2 : Overload relay
- F3 : Control circuit fuse

## Typical circuit diagram of Star Delta starter



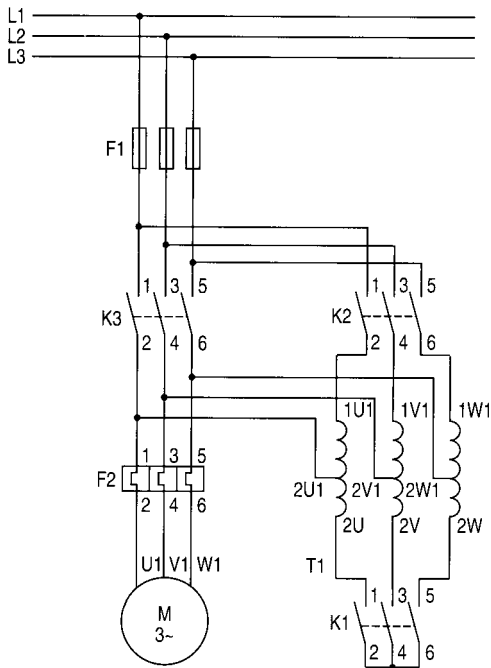
Main circuit



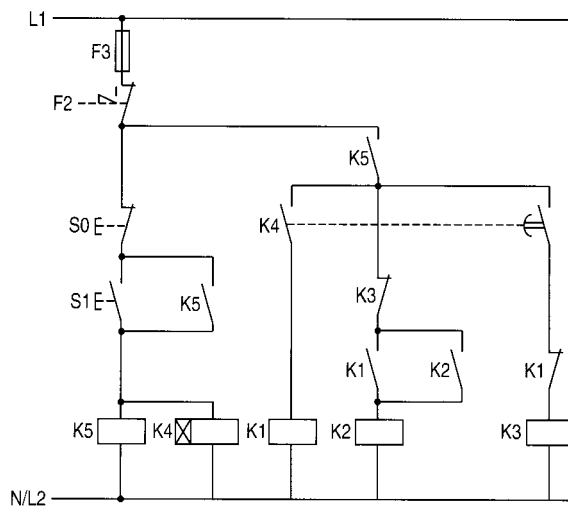
Control circuit for push button control  
(momentary command)

- S0 = 'OFF' Push button
- S1 = 'ON' Push button
- K1 = Line contactor
- K2 = Star contactor
- K3 = Delta contactor
- K4 = Star delta timer (7PU60 20)
- F2 = Overload relay
- F1 = Backup fuse
- F3 = Control circuit fuse

## Typical circuit diagram for Auto Transformer starter



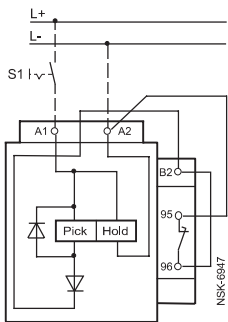
a) Main Circuit



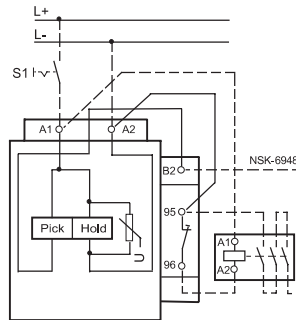
b) Auxiliary circuit for momentary-contact control

- S0 = 'OFF' Push button
- S1 = 'ON' Push button
- K1 = Star contactor
- K2 = Transformer contactor
- K3 = Main contactor
- K5 = Contactor relay (2NO + 2NC)
- K4 = Time relay (7PU6020)
- F1 = Main circuit fuses
- F2 = Overload relay
- F3 = Control circuit fuse

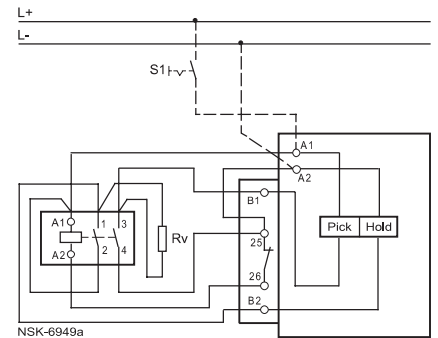
## Internal connection diagram for DC coil circuits



K1 : Sizes 3 to 6,  
3TF46 to 3TF51



K1 : Sizes 8 to 12  
3TF52 to 3TF56  
K2 : 3TF30 10 OB.. for 3TF54/55  
3TF32 00-OB.. for 3TF56



K1 : Size 12  
3TF57  
K2 : 3TC44 17 4A..

The control circuits indicated by dotted lines are to be wired by customer.