Manual Start Unit with Key Switch, 72x72 DIN Size

Features

Designed For Generator, Pump & Fire Pump Applications
Engine start and stop
Automatic shutdown on fault condition
Provides alarm and status information
Alarm and shutdown inputs
Provides charge alternator excitation current
Lamp test function

Monitors

Generator voltage (UV)
Generator frequency
Engine speed
Battery voltage
Engine running hour
Error indication

Fail Monitoring

Oil pressure
Engine temperature
Over voltage & Under voltage (generator application)
Over speed & Under speed (generator application)
Over frequency & Under frequency (generator application)
Low Battery Voltage
Charging alternator
Conf. Input-1 & 2

Controls

Engine fuel or stop solenoid
Starter motor
Alarm output
Configurable output

TRANS-CRANK unit has been designed to control the engine via three position key switch on the front panel. The unit is used to start and stop the engine, indicating the operational status and fault conditions. The unit can be programmed from a PC via RS-232 communication port. Measured generator voltage, generator frequency, engine speed, engine running hour and battery voltage can be observed on 7-segment LED display and Display button changes, which measurement result to be displayed.

The unit has three application feature; 'Generator', 'Pump' or 'Fire Pump'.

The unitprotects the engine against fault conditions. If a fault condition occurres, the module indicates the fault condition and shuts-down the engine.

The unit will check the alarms after safety on timer is expired.

Under one of these fault conditions the module will stop the engine;

- Over and Under Voltage(generator application),
- Over and Under speed (all applications),
- Over and Under Frequency(generator application),
- High Temperature,
- Low Oil Pressure,
- Shutdown (if one of conf. input selected shutdown and activated).

To reset the fault, turn the key switch to the ‘0’ position for a few seconds.

The Charge Failure is a warning alarm, so the engine continue to work under this failure condition. Also this input supplying charge alternator excitation current.

An **Off (0)** / **Run (I)** / **Start (II)** key switch (on the front panel) controls module operation and initiates engine cranking.

Important note: On the Fire Pump application; If a fault condition occurred, the module will not stop the engine. The engine will be stopped only when the stop button was pressed.

Program Parameters for Generator Application

Prog No	Parameter Name	Unit	Limits	Default
P 00	Application Selection (Generator,Pump,Fire Pump)	-	GEN,PUP,FPU	GEN
P 01	Generator Voltage reading enable/disable	-	Disable/Enable	Enable
P 02	Generator Voltage reading offset (P-N)	Volt	-20 - 20	0
P 03	Generator Voltage Lower Limit	Volt	60 - 600	320
P 04	Generator Voltage Upper Limit	Volt	60 - 600	440
P 05	Generator Frequency reading from generator voltage enable/disable	-	Disable/Enable	Enable
P 06	Generator Frequency Lower Limit	Hz.	30.0 - 75.0	47.0
P 07	Generator Frequency Upper Limit	Hz.	30.0 - 75.0	53.0
P 08	Sensing Option Pickup En/Dis & Flywheel Teeth	-	0(dis) - 1000	0(disable)
P 09	Speed Lower Limit	rpm	500 - 5000	1000
P 10	Speed Upper Limit	rpm	500 - 5000	2000
P 11	Nominal Alternator Frequency	Hz.	30.0 - 75.0	50.0
P 12	Nominal Speed	rpm	500 - 5000	1500
P 13	Battery Voltage Lower Limit	Volt	6.0(dis) - 30.0	8.0
P 14	Stop Solenoid Energising Time	Sec.	1 - 99	20
P 15	Pre-heat-time	Sec.	0 - 250	10
P 16	Safety On Delay	Sec.	0 - 99	10
P 17	Engine Running Time Value & New Engine Running Time	Hour	0 - 9999	0
P 18	Fail Safe	-	Disable/Enable	Disable
P 19	Conf.Input 1 0 - Disable 1 - Observation continuously 2 - After safety on delay expires	-	0 - 2	1
P 20	Conf.Input 2 0 - Disable 1 - Observation continuously 2 - After safety on delay expires	-	0 - 2	2
P 21	Conf.Output-1 Type 0 - Preheat or Alarm (Selected by Dipswitch) 1 - Simulate Fuel Solenoid Out 2 - Continuous Supply	-	0 - 2	0
P 22	Generator Frequency/rpm Fault Control Delay	Sec.	0.0 - 10.0	1.0
P 23	Generator Voltage Fault Control Delay	Sec.	0.0 - 10.0	1.0
P PS	Password	-	0- 9999	0

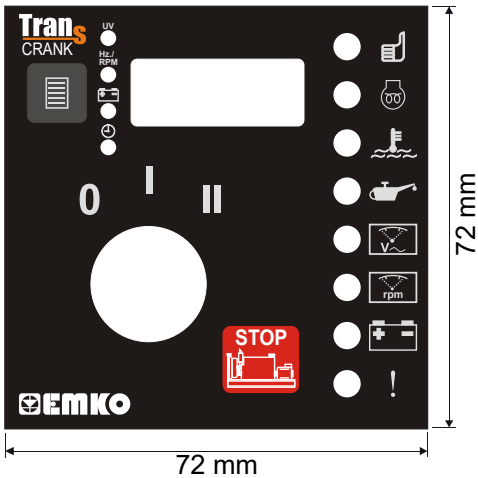
Program Parameters for Pump (Fire Pump) Application

Prog No	Parameter Name	Unit	Limits	Default
P 00	Application Selection (Generator,Pump,Fire Pump)	-	GEN,PUP,FPU	GEN
P 08	Sensing Option Pickup En/Dis & Flywheel Teeth	-	0(dis) - 1000	0(disable)
P 09	Speed Lower Limit	rpm	500 - 5000	1000
P 10	Speed Upper Limit	rpm	500 - 5000	2000
P 13	Battery Voltage Lower Limit	Volt	6.0(dis) - 30.0	8.0
P 14	Stop Solenoid Energising Time	Sec.	1 - 99	20
P 15	Pre-heat-time	Sec.	0 - 250	10
P 16	Safety On Delay	Sec.	0 - 99	10
P 17	Engine Running Time Value & New Engine Running Time	Hour	0 - 9999	0
P 18	Fail Safe	-		Passive
P 19	Conf.Input 1 0 - Disable 1 - Observation continuously 2 - After safety on delay expires	-	0 - 2	1
P 20	Conf.Input 2 0 - Disable 1 - Observation continuously 2 - After safety on delay expires	-	0 - 2	2
P 21	Conf.Output-1 Type 0 - Preheat or Alarm (Selected by Dipswitch) 1 - Simulate Fuel Solenoid Out 2 - Continuous Supply	-	0 - 2	0
P 22	Frequency/rpm Fault Control Delay	Sec.	0.0 - 10.0	1.0
P PS	Password	-	0- 9999	0

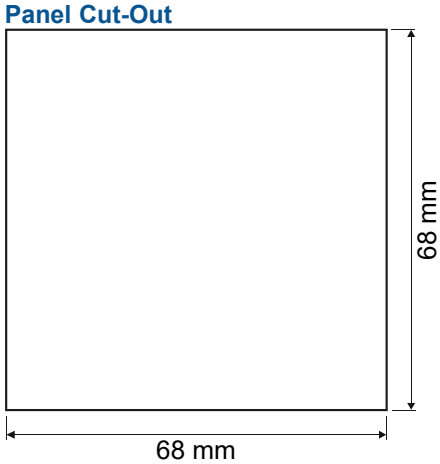
Specifications

Equipment Use	Electrical control equipment for generating sets
Housing & Mounting	72 mm x 72 mm x 60 mm
Panel Cut-out	68 mm x 68 mm
Protection	NEMA4X (IP30 at front panel, IP20 at rear side)
Weight	Approximately 260 gr.
Environmental Rating	Standard, indoor at an altitude of less then 2000 meters with non-condensing humidity
Operating / Storage Temperature	-25ºC to +70ºC / -40ºC to +85ºC
Operating / Storage Humidity	90% max. (Non-condensing)
Installation Over Voltage Cat.	II appliances, portable equipment
Pollution Degree	II, Normal office or workplace, non-conductive pollution
Mode of Operation	Continuous
EMC	EN-61000-6-4, EMC generic emission standard for industrial equipment EN-61000-6-2, EMC generic immunity standard for industrial equipment
Electrical Safety	EN-61010-1, safety requirements for electrical equipment for measurement, control and laboratory use
Supply Voltage	8 - 32 V⎓
Magnetic Pickup Input	35 to 10000 Hz (1 to 35 volts peak continuously).Accuracy: 0,25 % FS.
Generator Freq. Measurement	15,6 to 99.9Hz (15 to 300V~ L-N) Accuracy: 0,5 % FS, Resolution: 0,1 Hz.
Generator Voltage Measurement	3 to 300 V~ L-N, 5 to 99.9 Hz. Accuracy: 1 % FS, Resolution: 1V.
Cranking Dropouts	Battery voltage can be 0V⎓ for max. 100msn during cranking (battery voltage should be at least nominal voltage before cranking)
Outputs	Start output (12A @ 8-32V⎓) Fuel/Stop relay output (12A @ 8-32V⎓) Alarm relay output (5A @ 8-32V⎓) Configurable transistor output (max. 250mA)
Approvals	EAC , CE

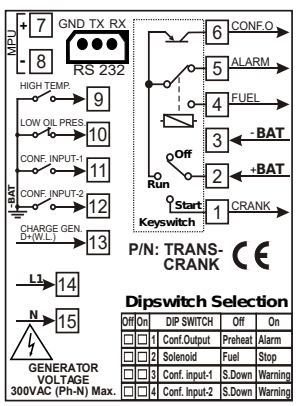
Dimensions & Front View



Panel Cut-Out



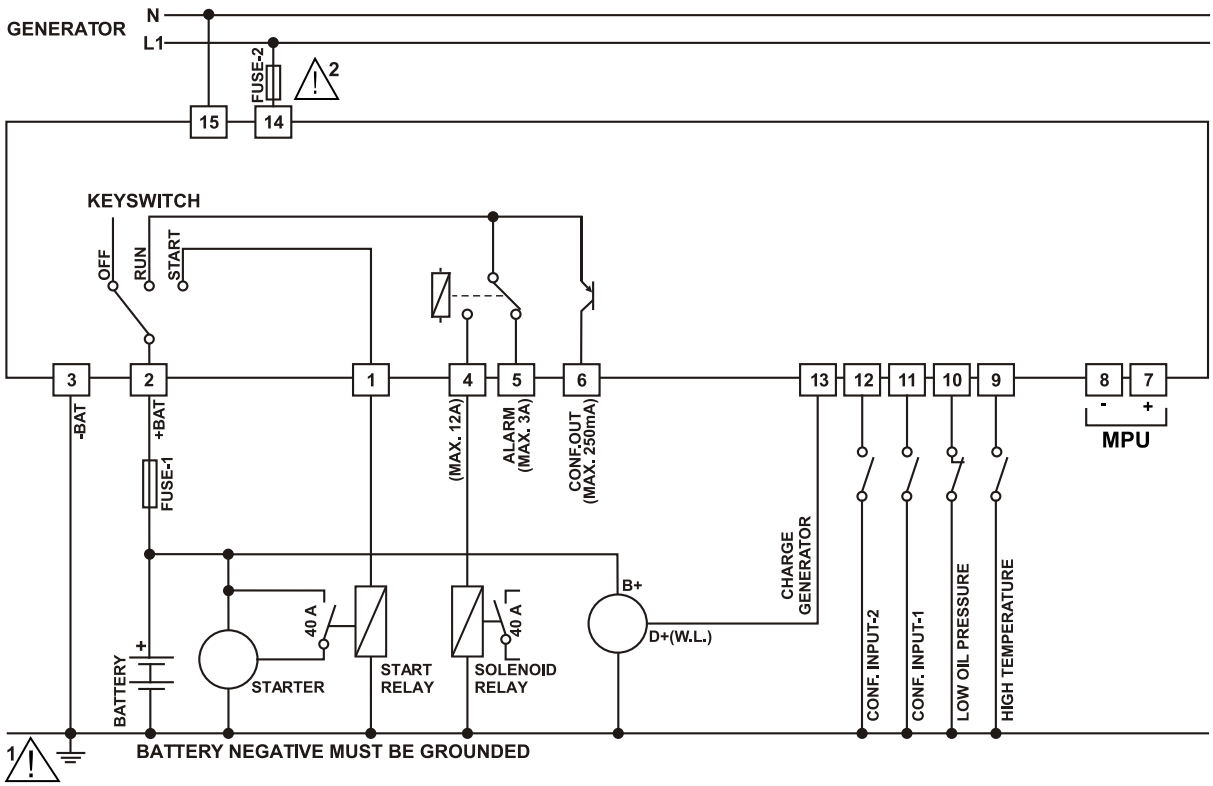
Terminal Connections



Dipswitch Selection

Off	On		DIP SWITCH	Off	On
☐	☐	1	Conf.Output	Preheat	Alarm
☐	☐	2	Solenoid	Fuel	Stop
☐	☐	3	Conf. input-1	S.Down	Warning
☐	☐	4	Conf. Input-2	S.Down	Warning

Connection Schematic

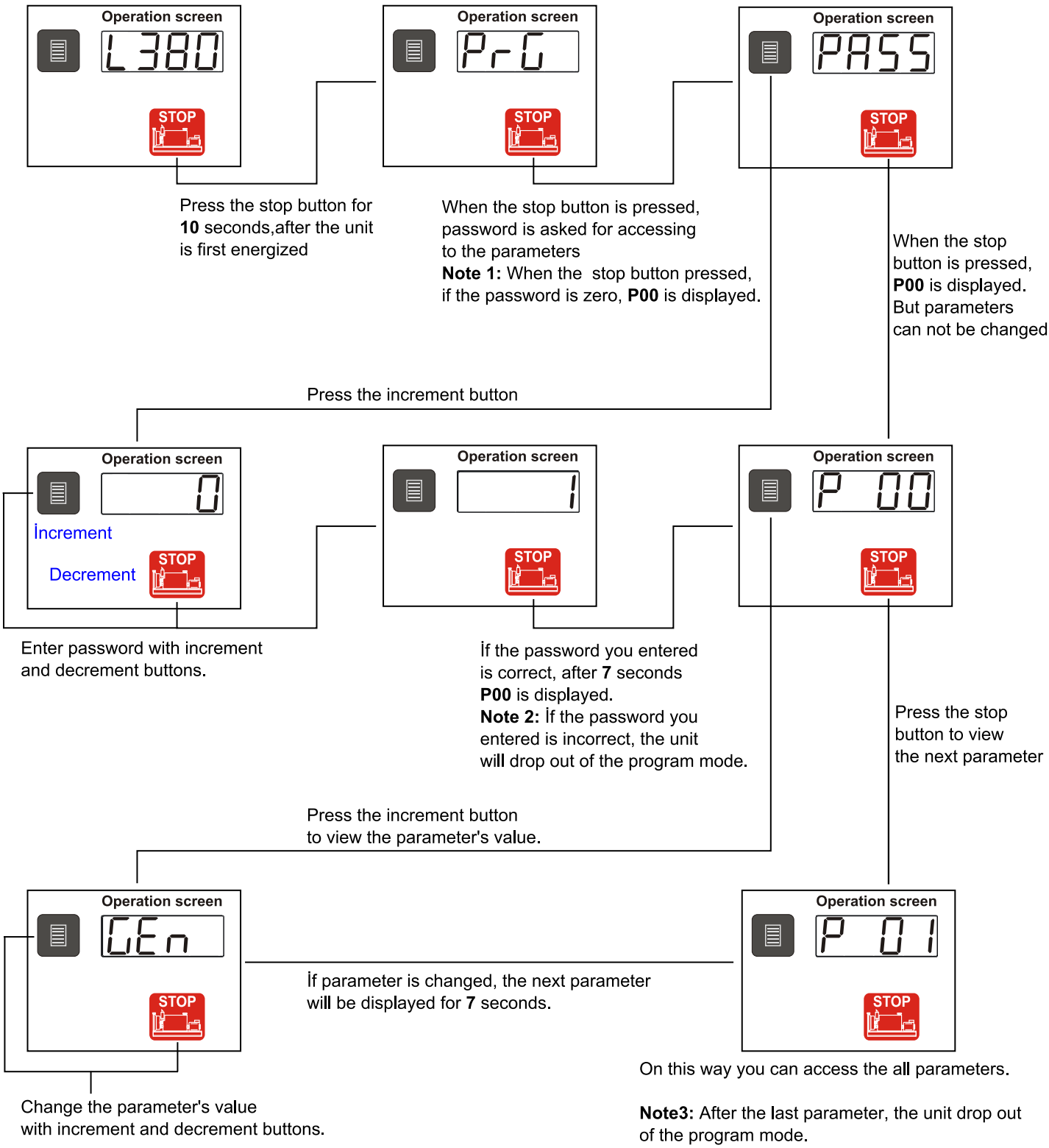


The fuses should be as follows:

FUSE-1	16A. T
FUSE-2	1A. T

1- Connect the unit as shown in the appropriate diagram above. Be sure to connect the battery supply the right way round and battery negative should be grounded.
2- Use Generator connection only generator application

Easy Access Diagram



Product Code

Trans_Crank	Manuel Start Unit With Key Switch, 72mmx72mmx64mm Size

https://www.emkoelektronik.com.tr/en/products/trans-crank