

SETTING UP – OVERVIEW

Two different ways are offered for the setting up of your DGT300+

■ Using the exclusive user friendly setting up software DGTsoft+ on a computer via USB connection

Choose the required type of application, fill in the datafields with your own data, and upload the file to the DGT300+. At any point in the software you can call the help online which gives you more details about the procedure.

■ Using the front face keypad when there is no computer available (password requested: [Esc–Ent–Esc–Ent–Esc])

The procedure is based on the “Initial set of parameters” related to each type of application (see documentation : 3- case studies). Enter data following menu page I.

Sensor(s) calibration

Follow the automatic calibration procedure

Software> Homepage > Connect > open your application

Keypad > Input menu > measure > ... (load cells / torque sensor)
> Input menu > diameter > ... (diameter sensor)

Set point value

Open loop > define Effort max available on
> set point is % of the full scale defined in Effort max

Close loop > enter directly target value

NOTA: Set point is adjustable at any time with front panel keypad

D

Inputs / outputs, dynamic parameters, power output limitation

Refer to application data related to your application type

Regulation stability

When necessary, adjust parameters marked(*) in case studies manual to improve system stability.
Variable PID function (coefficients proportional to diameter) can be used in case of issues with stability.
Diameter measurement is then required.

NOTA

Parameters recommended by Merobel for each standard application are available in user manual (see documentation : 3- case studies).

PC software – Installation and use

Download DGTsoft+ (PC software) on website:

<https://www.redex-group.com/products/services-merobel/>

Launch the “Setup” file to automatically install DGTsoft+ on your PC.
Link : 1- install DGTsoft+\\setup.application

During installation process, a shortcut is automatically created on the desktop and in start / program directory.

The application is launched by a double click on the icon.

In case of issues with USB connection, check first your DGT300+ is switched ON and connected to PC with USB cable.

E

Your DGT300+, champion in its category

User friendly interface

- Selectable language / Selectable metric or Imperial units
Hold & Release on front panel keypad

Fully compatible with :

- Any current load cells technologies, one or two load cells , Ultrasonic sensors (direct input available)
- Tare function for zeroing measure input (drift compensation)

Built in PWM power supply

- Up to 1.5 A
- No need of external power supply for most of MEROBEL EMP brakes & clutches

Communication via Ethernet port

- See documentation 6- Modbus protocol

PC software setting up and debugging

- Unlimited configuration records by software
- Real time full control panel available
- Scope function for data real time readout and record

Advanced regulation capabilities

- Automatic P.I.D. parameters variation function
- Closed loop + open loop mode
- Inertia compensation control
- Smooth starting up with programmable slope
- E-stop torque proportional to the set point
- REGUL / HOLD process driven by encoder signal option
- Adjustable taper function available
- No-Stop web turrets management function
- Five complete built-in memories
- Motors & Drives specific settings

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Compact Guide

CONTENTS

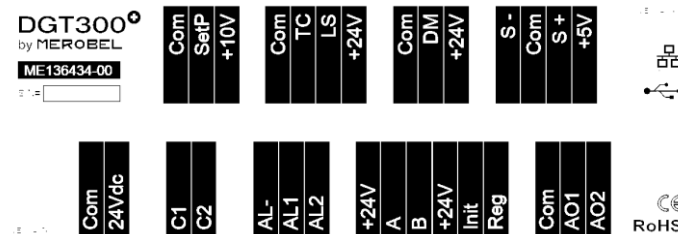
- B - Kit description – Use precaution
- C - Dimensions - Fixing
- D/E - Setting up - PC software installation & use
- F/G – Connections & Process
- H - Sensors wiring – Keypad basics
- I – Full programming menu with front panel keypad

Software and documentation available:

<https://www.redex-group.com/products/services-merobel/>

A

CONNECTIONS & PROCESS



CONFIGURATION PROCESS (A & B inputs)

►A & B inputs

Digital inputs A & B are dedicated to the management of the controller global status in accordance with the opposite table (expect No-Stop mode activated). AO2 is dedicated for external readout (measure, set point or diameter) out of speed follower and No-Stop mode

A	B	Output AO1
0	0	Hold
0	1	Regul
1	0	Release
1	1	E-Stop

0 : switch Open
1 : switch closed
(to 24Vdc terminal)

Init	Reg	PID calculation
0	0	calculation stopped
1	0	calculation initialization
0	1	calculation in process
1	1	calculation in process

► Init & Reg inputs

Digital inputs Init & reg are dedicated to the management of calculation process (Pid calculation)

CAUTION ! ► Machine stopped : B open (hold mode)
► Machine running: B closed (regulation mode)

F

CONNECTIONS

Com : 0 V
SetP : Set point (0-10V or Pot.)
+10V : 10V supply
Com : 0 V
TC : Tacho input (0-10 V)
LS : Encoder input (5-24 V PNP/NPN)
+24V : 24V supply
Com : 0 V
DM : Diameter input (sensor US)
+24V : 24V supply
S- : Signal (-)
Com : 0 V
S+ : Signal (+)
+5V : Sensor supply

Com : 0 V – main supply
+24Vdc : + 24 VDC – main supply
C1 : Power output direct supply1
C2 : Power output direct supply2
AL- : Output logic reference
AL1 : Logic output1
AL2 : Logic output2
+24V : Logic output voltage remote control
A : Logic input 1 ⁽¹⁾
B : Logic input 2 ⁽¹⁾
+24V : Logic input voltage remote control
Init : Logic input INIT ⁽²⁾
Reg : Logic input REG ⁽²⁾
Com : 0 V
AO1 : Analog output 1 (-10 -> +10 V)
AO2 : Analog output 2 (-10 -> +10 V)

⁽¹⁾ Process configuration – see page F
⁽²⁾ Regulation calculation configuration

G

KIT COMPONENTS

- 1 Digital controller DGT300+ NG (Réf ME136434-00)
- 1 Front panel
- 1 Accessories kit
- 1 USB wire for PC connection→ DGT300+

IMPORTANT – Use Precaution

A- Do not install DGT300+ in a zone with presence:

1. Of excessive and/or conductive dust
2. Of corrosive and/or flammable gas
3. Of excessive heat
4. Of important shocks and vibrations

B- Installation has to be done in accordance with electric standards

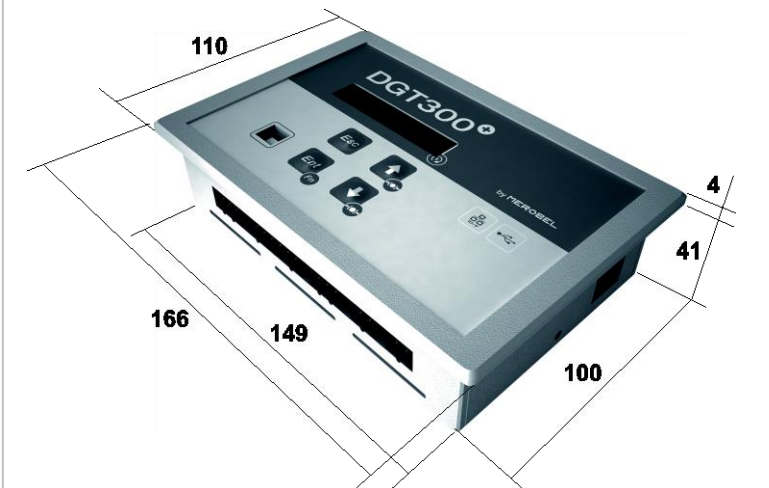
C- Forced cooling is compulsory in case of installation in closed enclosure cabinet. Vertical mounting position is recommended

D- Device never has to be in touch high humidity environment or water, fluid projection

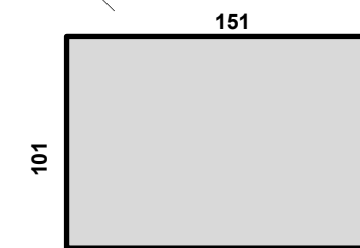
E- During installation (and production) prevent external particles or object falling inside unit.

F- Install farthest possible cables and equipments of power and high voltage

DIMENSIONS - FIXING



Fixing clamp mounting

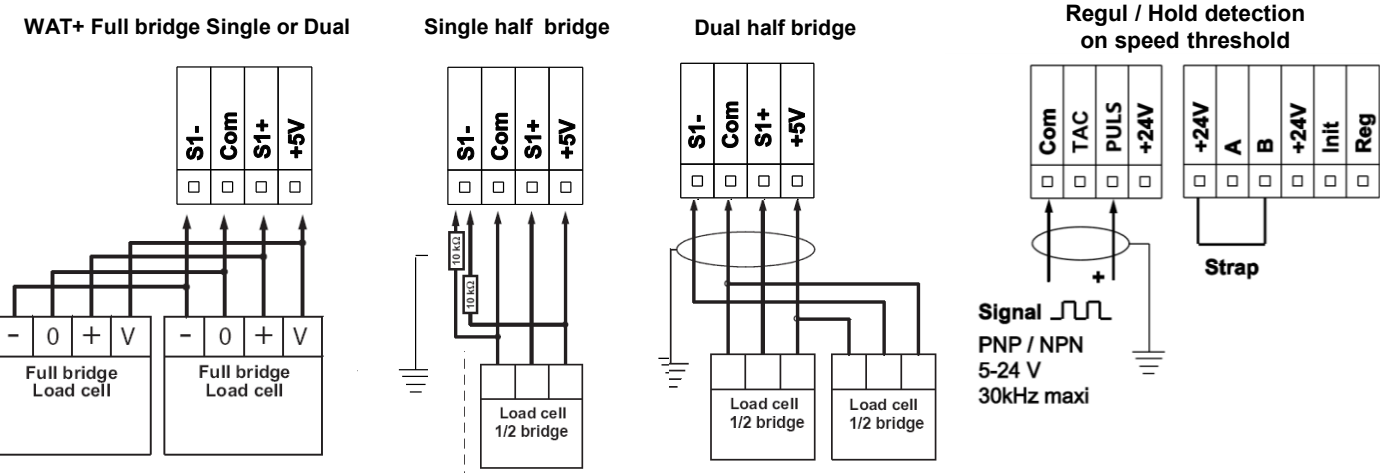


Front panel aperture

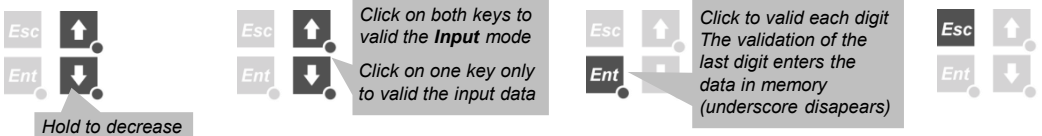
B

C

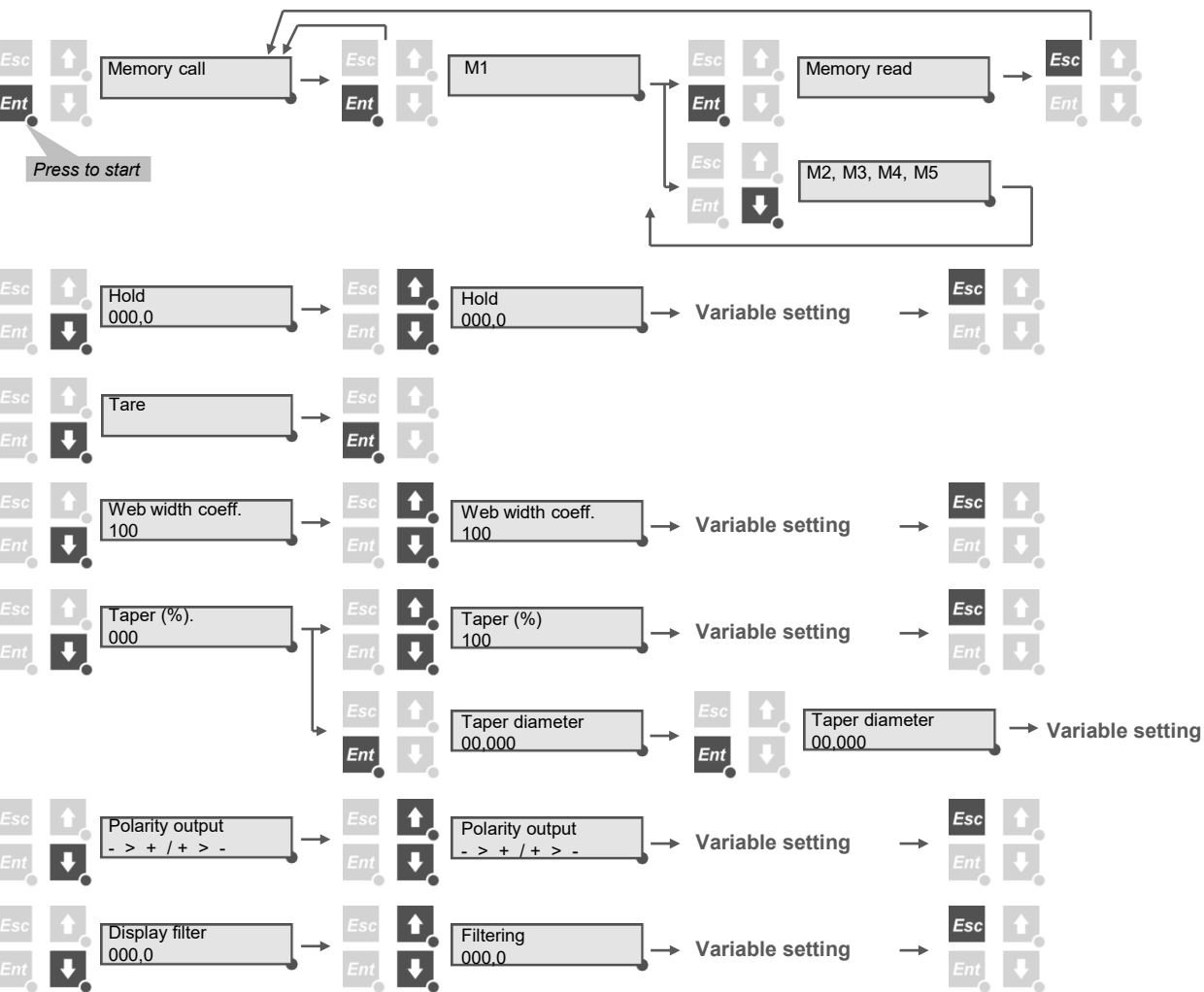
SENSOR WIRING(S) & LINE SPEED



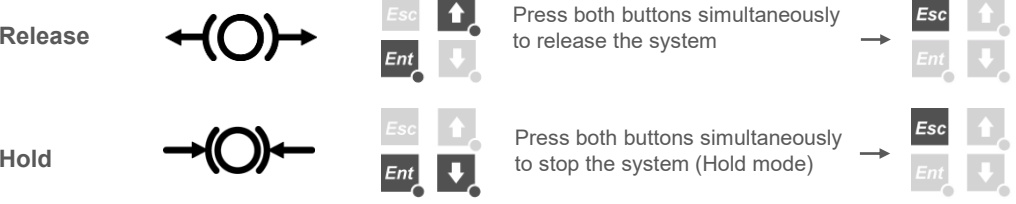
KEYPAD BASICS



1 – front panel keypad - Operator mode



2 – Functions Release and Stop



FULL PROGRAMMING MENU WITH FRONT PANEL KEYPAD

level1	level2	level3	level4	level5	level6
memory call	choice 1				
hold					
Tare					
web width coeff.					
taper (%)	taper diameter				
output polarity	choice 2				
display filter	filtering				
IP setting	address TCPIP	address0 address1 address2 address3			
	mask TCPIP	address0 ... address3			
	gateway TCPIP	address0 ... address3			
access to this setting menu with code password					
ESC – ENT – ESC – ENT – ESC					
display	language	choice 3			
	units	measure diameter	choice 4 choice 5		
	display config.	1st line 2nd line	choice 6 choice 6		
inputs	measure	calibration preset 0-10v tare filtering	upper level val. bottom level val.	full scale % validate	validate
	setpoint	setpoint option -> filtering Dmax value Dmin value filtering	internal external 0-10V	setpoint value slope duration	
	diameter				
	line speed	speed option -> filtering	analog pulse	nb pulse / m threshold	
regulation type	open loop basic PID	max. effort P: I: D: loop coeff	inertia gain	web width coeff.	
	variable PID	max diam. Coeff. min diam. Coeff. loop coeff	P: I: D: p: i: d: OL coeff CL coeff inertia gain speed gain	web width coeff. coeff speed overspeed	
functions	time delay start time delay stop stop option non-stop hold taper diameter threshold	duration (*10ms) duration (*10ms) Choice 7 Choice 8 hold taper (%)			taper diameter
outputs	AO2 readout alarms power output	Choice 9 AL1: error range AL2: diam. limit gain			
memories	save call	choice 1 choice 1			

choice1

M1

M2

M3

M4

M5

Choice 2

- → +

+ → -

Choice 3

french

english

italiano

deutsch

chinese

japanese

turkish

spanish

Choice 4

N

kg

lb

Nm

PLI

Ft/lb

%

Choice 5

m

ft

Choice 6

AO1 readout

AO2 readout

setpoint

diameter

measure

AO1 config

AO2 config

Choice 7

fixed

proportional

Choice 8

disable

enable

Choice 9

setpoint

measure

diameter

rotation speed