

**Argo program IDG SOLO Engineering Table
SOLO V0.1**

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Standard dive “F” message	
Char	Contents
1	ID: engineering message identifier 'F'
2-4	Pcnts: Pressure counts sampled at the end of drift
5-8	T1: Temperature counts sampled at the end of drift
9-20	V100, V50, V0: FSI 100%, 50%, 0% sampled reference values
21-24	CVAL: FSI conductivity value at the end of drift
39-41	ATE: Air pressure inside float at the end of the previous cycles surface interval. (mmHG)
42-44	ATS: Air pressure inside float at the start of the current cycles surface interval (mmHG)
45-47	TIA *2 : time (s) if air bladder was refilled at last surface.
48-50	PFE: Pressure counts at the end of the SOLO fall time
51-53	PSE: Pressure counts at the end of the MULTI_SEEK cycle.
54-56	TSK *2: seconds that piston ran during first settling (SEEK) cycle. ARGO TECHNICAL NAME: TIME_PistonRanDuringFirstSeek_seconds
57-59	PSK: (signed) dbar change in 1 st settling cycle (SEEK) ARGO TECHNICAL NAME: PRESSURE_ChangeInFirstSeek_dbar
60-62	TIP *2 : seconds to run piston UP to get to SEEK depth. ARGO TECHNICAL NAME: TIME_PistonRanDuring DescentFrom100db_seconds
63	BST 4-bit status of miscellaneous operations
Other Technical information found in other SOLO messages	
Msg/Char	Contents
0 / 2-4	Pavg1: Average pressure counts over first half of drift – Trajectory Information
0 / 5-6	Tavg2: 8 LSB of Average temperature over second half of drift – Trajectory Information
0 / 7-8	Vcpu: CPU battery voltage counts (V), on surface at start of Xmit after data processed ARGO TECHNICAL NAME: VOLTAGE_BatteryCPUStartXmit_volts
1 / 2-4	Tavg1: Average temperature counts over first half of drift – Trajectory Information
1 / 5-6	Pavg2: 8 LSB of average pressure over second half of drift – Trajectory Information
1 / 7-8	Vpmp: Pump battery counts at surface (V) VOLTAGE_BatterySurfaceNoLoad_volts
2 / 2-4	Sprss: Average surface pressure at the surface from last cycle ARGO TECHNICAL NAME: PRES_SurfaceOffsetNotTruncated_dbar
3 / 2	Err: 4-bit error code. signifying a spurious interrupt, stack overflow or spurious reset.
3 / 3-4	Imin: Minimum depth bin with valid data according to the float In TS01: If the first bin is filled, Imin=0; Thus Imin=Imin+1. ARGO TECHNICAL NAME: NUMBER_MinimumDepthBinWithValidData_COUNT
3 / 5-6	Bmax: Maximum depth bin with valid data according to the float In TS01: The number of good bins are stored in Bmax. Thus after Imin=Imin+1 is applied Bmax=Bmax+(Imin-1) ARGO TECHNICAL NAME: NUMBER_MaximumDepthBinWithValidData_COUNT

Argo program measurement codes (MC) SOLO floats return the following Measurements and no other. However, enough spots in the Measurements array must be reserved for possible DMQC modification.			
Code (timing)	SOLO I Variable	Description	Units
0	Cy 0	Deployment (Metafile)	Time,position
150	Cy>0: Eng "F"	PFE: Pressure taken at end of SOLO fall time (Eng "F", bytes 48-50)	P(0.5db)
296	Cy>0: Msg 0,1	Drift broken into two averaged halves. Stored in Msg 0,1 Bytes 2-6; Time is fill value.	P(0.1db),T(0.001° C)
300	Cy>0: Eng "F"	P,T,S triplet taken at end of drift (Eng "F", bytes 3-24)	P(0.1db); T(0.001°C),S(0.001psu)
702, 704	ARGOS messages	Time of first/last ARGOS messages received	
703	ARGOS positions	ARGOS positions received	
<p>SOLO floats return the previous Measurements and no other. Enough spots in the Measurements array must be reserved for DMQC modification.</p> <p>For Cycle 0: 100(fillvalue),200(fillvalue),500(fillvalue),600(fillvalue),700(fillvalue),800(fillvalue)</p> <p>For Cycle>0: 100(fillvalue),200(fillvalue),150(fillvalue),250(fillvalue),296,296,300(fillvalue),400(fillvalue), 500(fillvalue),600(fillvalue),700(fillvalue),800(fillvalue)</p>			